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DEPARTMENT OF THE INTERIOR
U. S. BUREAU OF EDUCATION

BULLETIN, 1917, No. 16

STUDIES IN HIGHER EDUCATION IN ENGLAND AND SCOTLAND

WITH SUGGESTIONS FOR UNIVERSITIES AND COLLEGES
IN THE UNITED STATES

By GEORGE EDWIN MACLEAN
FORMERLY PRESIDENT OF THE STATE UNIVERSITY OF IOWA



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LETTER OF TRANSMITTAL

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, March 10, 1917.

SIR: Because the changes in tendencies and ideals in higher education in Great Britain and the consequent changes in the curriculum and the details of administration in colleges and universities within the last few years contained so much of general interest for higher education in the United States, in 1913 I commissioned Dr. George Edwin MacLean, formerly president of the State University of Iowa, to make a careful first-hand study of the newer features of these institutions, and to prepare a report on them for this bureau. This study was made by Dr. MacLean, with the generous cooperation of university and college officials between 1913 and 1915. The report thus includes an account of progress until the beginning of the present war. I recommend that these reports be published as bulletins of the Bureau of Education under the titles, "Studies in higher education in England and Scotland" and "Studies in higher education in Ireland and Wales."

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR,

PREFACE.

The object of this study, and of the preceding one devoted to Ireland and Wales, is to point out facts and tendencies in higher education in Great Britain by which American universities and colleges can profit. Since May, 1913, the compiler of the bulletin has visited 56 institutions, of which 18 have been universities, 14 university colleges, 24 colleges and technical and agricultural colleges and schools.¹

The wide diversity in the institutions due to differences in age, type, and even race, may easily lead one astray in a comparative study of them. The differences in phraseology among the British institutions themselves, and in turn the differences between their usages and those current in the United States, must be constantly kept in mind to prevent confusion of thought.

Uniformly the officials and other members of the staffs of instruction of the institutions as well as prominent educationists in the national boards of education and eminent leaders in the world of politics and thought, have shown courtesies to the writer and have put at his disposal important documents, to all of whom he makes grateful acknowledgment.

¹ They are as follows: Universities—Oxford, Cambridge, London, Durham, St. Andrews, Glasgow, Aberdeen, Edinburgh, Wales, Dublin (Trinity College), National University of Ireland, Queen's University of Belfast, Victoria University of Manchester, Birmingham, Liverpool, Leeds, Sheffield, Bristol; university colleges, at London—University College, King's College, King's College for Women; at Newcastle—Armstrong College, Dundee, and the Department of Medicine; Cork, Galway, Dublin, Aberystwyth, Bangor, Cardiff, Reading, Exeter; colleges, technical and agricultural colleges and schools (outside the incorporated colleges), at Oxford—Ruskin College, Lady Margaret Hall, Somerville; at Cambridge—Girton, Newnham, Selwyn; at London—Imperial College of Science, Bedford College for Women, East London College, London School of Economics, Goldsmiths' College, Woolwich Polytechnic; at Manchester—the Municipal School of Technology; at Glasgow—Royal Technical College, West of Scotland Agricultural College; at Dundee—Technical College; at Aberdeen—City's Domestic Science School, Gordon's College; at Edinburgh—Heriot-Watt College; at Dublin—the Royal College of Science, the Albert Agricultural College, Glasnevin, Alexandra College; at Belfast—Royal Belfast Academical Institute, Municipal Technical Institute. The Irish and Welsh institutions mentioned above will be treated in the bulletin on Higher Education in Ireland and Wales.

STUDIES IN HIGHER EDUCATION IN ENGLAND AND SCOTLAND.

INTRODUCTION.

The present is a moment of the keenest interest for the study of institutions of higher learning, particularly of universities, in Great Britain. Before the war they were in a stage of such rapid evolution as to leave the question in the balance whether the outcome would be revolution or reform. The war heightens the interest. Will it arrest their development or accelerate it?

The agitation of a half century, which culminated in the parliamentary universities' acts of 1854, 1856, and 1858, largely shifted the English and Scotch universities from an Elizabethan to a Victorian administration and atmosphere. The last 60 years have seen continuous changes wrought within the universities, in part of their own motion, and in part by royal commissions and acts of Parliament. The report of the royal commission on university education in London in 1913, and rumors of further royal commissions, show the end is not yet. The universities are beginning to feel the effects of the educational era inaugurated in England for elementary education by the act of 1870, and continued by a series of educational acts. The aspiration for a national *system* of education, which matured early in Scotland, and was formulated in Wales to the extent of founding its national university in 1893, is strong in England, and would make the universities the coordinating centers. The people are beginning to look to the universities and colleges as the light and power stations for the "school power," which Dr. Sadler has put next in importance to "sea power" for the Island. The rise of the industrial age brought home to England as a world power, especially by the increased competition in trade and manufactures of the United States, and particularly of Germany, the need for the promotion of technical schools and of attention to modern languages and applied science in the higher institutions.

Imperialism has stimulated the universities to affiliate or recognize colleges throughout the Empire. In 1912 it became a conscious force in the university's sphere through the first congress of the universities of the Empire, and it seeks a permanent organ of expression in The Universities Bureau of the British Empire. The war has intensified the note of imperialism.

Romance surrounds the genesis and growth of English universities. After the evening and the morning of the twelfth and thirteenth centuries, when the light of Oxford and Cambridge dawned, there came six centuries of rest from the making of an English university by a people otherwise so active. At length religious reactions, science, industrialism, and nationalism brought a new creative day in the nineteenth century, in which appeared the three Universities of London, Durham, and the Federal Victoria University, together with various satellite university colleges and technical schools. The first decade of the twentieth century saw the organization in their present form of the six Universities of Birmingham, Manchester, Liverpool, Leeds, Sheffield, and Bristol, equaling the total number established during the preceding seven hundred years.

The romance of the history of British universities is unrivaled. On the one hand is the halo of antiquity, piety, and patriotism, which hangs about the ancient universities, with their kings and queens, martyrs, churchmen, statesmen, and scholars; and on the other hand, the modern institutions, with their tale of the munificence of captains of industry, of self-sacrificing women, of civic pride and of national and humanitarian service.

The oneness of the New World with the Old is found in the parallel story of the planting of American colleges along the Atlantic seaboard and by the western pioneers on the prairies and beyond the Rockies. Indeed, the similarities between the British and American institutions grow upon one who studies them. Knowing the descent of the American from the English college, one is prepared for the family likeness, and recognizes that the differences are largely superficial. Both are at work upon the same great problems. Each may learn from the other. The British commissions and delegations of teachers have not been slow in recent times to visit America and to profit by American educational experiments.

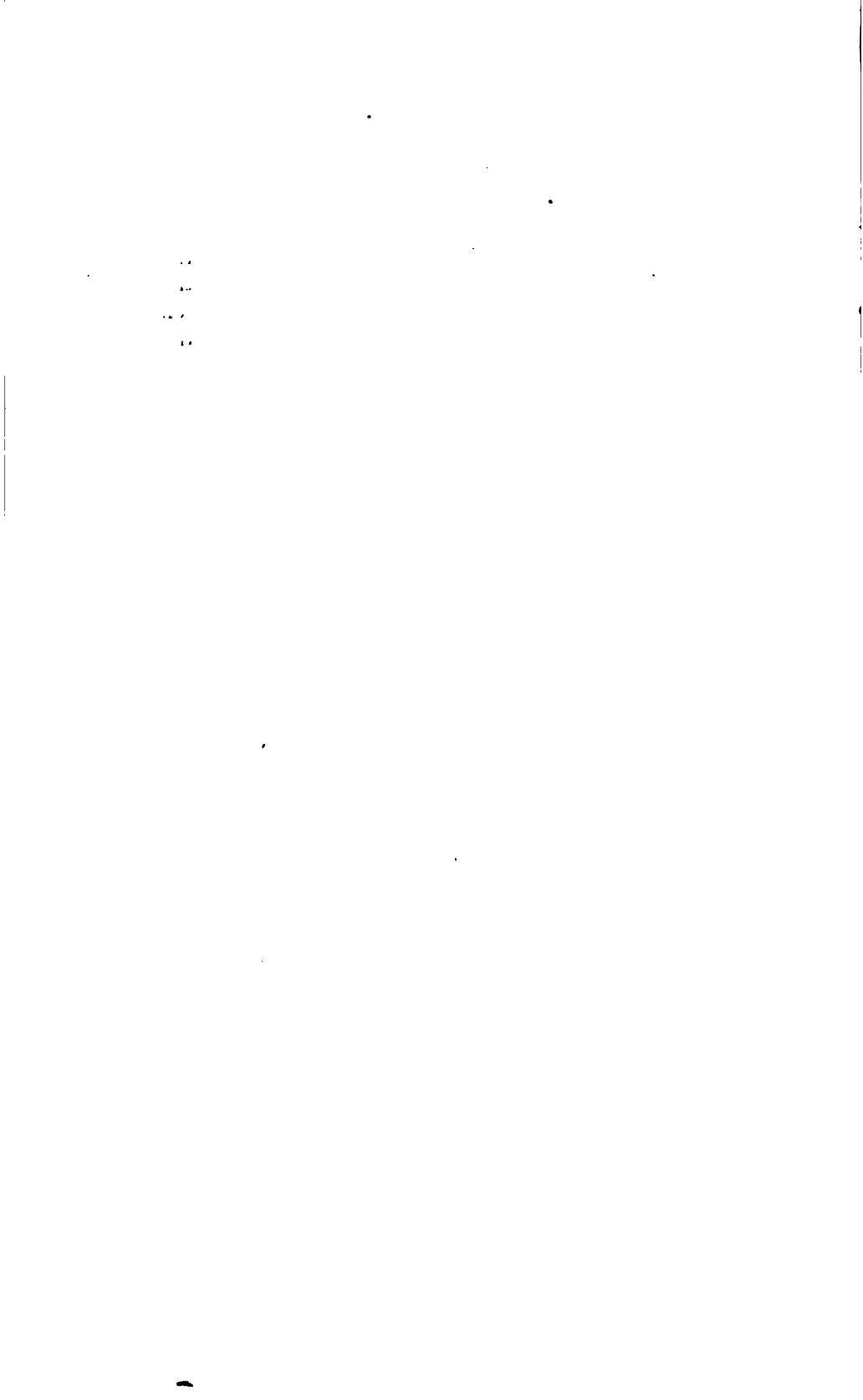
The subject of this bulletin has an immediate practical as well as a theoretical interest, in view of the considerable and increasing number of American students in the United Kingdom, in addition to the nearly 100 Rhodes scholars from the United States in residence at Oxford. A better understanding of the higher education of the two countries will cement the bond of common Anglo-Saxon institutions, language, literature, and international obligations.

The institutions in England and Scotland fall into eight groups, consisting of four types of universities and four kinds of colleges. They are, in the approximate order of their evolution: I. Oxford and Cambridge, with Durham as a modern variation. II. The Scotch universities, St. Andrews, Glasgow, Aberdeen, Edinburgh. III. London. IV. The new or provincial universities at Manchester (Victoria), Birmingham, Liverpool, Leeds, Sheffield, and Bristol.

V. The independent university colleges at Exeter, Nottingham, Reading, and Southampton. VI. Technical colleges and schools. VII. Agricultural colleges and schools. VIII. Women's colleges.

The older groups have been the direct or indirect progenitors of the younger. Over and above formal affiliations, all the groups are more closely interrelated than the public are aware of, by the presence on their faculties of the graduates of the different institutions, by joint examining boards, and by common representatives on their governing boards. On the other hand each institution of the same type has the most distinct individuality.

The first part (Chapters I-VIII) of the bulletin consists of studies of certain historical features of these groups, in order to understand present conditions and tendencies in true perspective, and with incidental suggestions interspersed. The second part (Chapters IX-XIX), based upon the studies of the first part, is an attempt to apply them to the solution of problems common on both sides of the Atlantic. The third part (Tables 1-15) contains statistical information, most of which was kindly furnished directly to me by the institutions and represents the normal conditions of the year before the war.



PART I.—HISTORICAL STUDIES AND SUGGESTIONS.

Chapter I.

FIRST GROUP OF UNIVERSITIES.¹

Oxford, Cambridge, Durham.

The twin universities, Oxford and Cambridge, are unique among the world's universities. Solitary in their grandeur in England for six hundred years, their modern variant, Durham, appeared in the nineteenth century. Oxford and Cambridge, alone known still in England as "the Varsities," together with the Scotch universities, are the parents of all the universities and colleges in the English-speaking world. They are marvels of complexity, representing a luxuriant tangle and growth of centuries. It is not surprising that many half truths abound concerning them. The greatest surprise is to find that, amidst their outward medievalism and the popular notion of their ultraconservatism, they are permeated with the spirit of progress. In view of their historical leadership and relations to American institutions they can teach many lessons to the United States. All this is contrary to the ideas of many Americans and Englishmen. A professor at Oxford, when he learned the purpose of the author's visit, to gather hints for the improvement of American education, exclaimed, "Good heavens! We need that you should send missionaries to teach us." Whatever of truth there may be in this exclamation, an American must not forget that apostles from Oxford and Cambridge planted the colleges and universities of his land.

The home was the primordial germ of the university, with the teacher as its nucleus. The scholars gathered in the house of the teacher, the magister, who had come from Paris or Italy. As the scholar's fellowcraftsmen of different trades, when aliens in a foreign city, organized a guild, called a *universitas*, so the scholars' community springing from the home became the *universitas magistrorum et scholarium* (or *discipulorum*).² As early as 1190, the schools at Oxford are called the *commune studium litterarum*, a synonym, ap-

¹ See Table 1.

² Article, "Universities," in *Ency. Brit.*, 11th Ed.

parently, for *studium generale*, a common name for a school open to all comers from any nation.

Next to the influence of the personality and home of the teacher the incipient university was shaped by the regulations of the guild, "the medieval trades union," with its close organization, oaths and laws of promotion. The regulations of the trades union were applied for admission and for the gradation of apprentices and master workmen with their degrees. Like the journeyman of any trade, the master of arts by producing his masterpiece proved himself competent to teach.¹

The local ruling masters (*regentes*) in the schools, and the experienced teacher (*doctor*), or those applying their doctrine in the practice of the professions, might attain the grade or degree of doctor. The church, which in its cathedral schools and monasteries had kept learning alive, spread its blessing and authority over the rising schools. The chancellor of the neighboring bishop, the usual head of the cathedral school, became the natural head of the university. The teachers belonged to the clergy. The church lent to the young universities not only of its privileges and of its ecclesiastical organization but also of its spirituality. Men consecrated by holy church, not only in religious brotherhoods but also in a clergy devoted to secular subjects, imparted a spirit of consecration to university learning. They created a line of professors to be known as the priesthood of truth. Their institutions were for all time differentiated from trade schools; their true students had to be the chosen few, men of a vocation, not of an avocation.

In the latter half of the thirteenth century and in the early fourteenth century, the monasteries and orders, especially the Franciscans and Dominicans at Cambridge, contributed their influence. The foundation of the colleges at the same time preserved the independence of the university, aided by certain royal and ecclesiastical factors. Some of the colleges, like Merton, prohibited the admission of the "religious," or monastic, as contradistinguished from the secular clerics. The church and the orders in their first days of gospel fervor impregnated the universities with a religious spirit. The rise of the colleges, combining the idea of the family, consisting of the masters, fellows, and scholars, with that of the fraternity of the monastic orders with their vows of poverty, obedience, and celibacy, has made character building the fundamental aim of college life. Except for these essentials of Christian character and brotherhood, and the architectural feature of the cloister in the quadrangle or court of the college, contrary to the popular opinion, the college was not monastic

¹ Holland, T. E., "The Origin of the University of Oxford," *Eng. Hist. Rev.*, Apr., 1891.

² Wells, J., "Oxford and Its Colleges," p. 11, Methuen & Co., 1910.

and even became antimonastic. The college provided instruction outside the curriculum of the monastic or cathedral schools. It must be added, however, that the orders stimulated scholasticism, which not only has entrenched theology in a central position as the highest faculty to the present day but has also given a fine predominance to philosophy.

The state became another godmother to the youthful universities, and with the growth of nationalism, not second to the church. Naturally, students from the same locality formed "nations" for mutual protection, after the analogy of the guilds of aliens in foreign cities. Oxford had its northern and its southern nation. The organized opposition of the students to the city authorities, due sometimes to the imposition by the citizens of high rents and prices for food, and sometimes to the misdemeanors of the students, resulted ultimately in the establishment of university courts, independent of local jurisdiction, by a series of royal charters. The magna charta of academic freedom at Oxford and Cambridge has been dated from 1231, when Henry III decreed for both the universities that the rents should be fixed, *secundum consuetudinem universitatis*, by two masters of the university and two citizens.¹ To this day Oxford appoints a clerk of the market, and both the universities are represented in the city councils. In general, popes and the church confirmed the privileges of the universities. Probably by the end of the fourteenth century the word "university" began to be used without qualification for a community of teachers and scholars whose corporate existence had been sanctioned by civil or ecclesiastical authority, or by both.² The universities owe their autonomy and national spirit primarily to the state. They attained recognition as national institutions when, under Elizabeth, an act of Parliament (1571) confirmed them in their possessions and privileges, and later when James I gave them representation in the House of Commons, which even the present proposed bill for the abolition of plural voting does not repeal. They have kept pace with the development of the nation into an Empire by the affiliation of the colonial universities. In congregation at Oxford a speaker declared that the university was not only national, but imperial and international. The leadership in church and state for 700 years has been in the small band of graduates of the two "varsities," an infinitesimal number in proportion to the population. A German is constrained to testify that, in the period just passing, the class which has ruled and been representative of England, to which England has owed essentially its fame and signifi-

¹ Minerva, "Handbuch der Gelehrten Welt," Strassburg, 1911, p. 216.

² Deitze, Heinrich Suso, "Die Universitäten des Mittelalters bis 1400," Berlin, 1885, Vol. I, pp. 1-29.

cance, was really the fruit of academic education, of academic studies, and academic life.¹

There is something educative, as is commonly remarked, in the very antiquity of the universities. The passing stranger and the careless freshman have their horizon, at least momentarily, broadened by a glimpse of the monuments of many centuries, overtopping our self-conscious and boastful century.

"And strange enchantments of the past
And memories of the days of old"

steal over them. The American, with his at best "modern antiquities," can not transport these genuine antiquities, but he can import their historical associations, which are also his inheritance.

His institutions should gather and preserve in their historical perspective the spirit of the studies and truth of the movements which successively dominated the ancient universities. He must remember scholasticism, Catholicism, Wyclifism, humanism, Anglicanism, Puritanism, Neoplatonism, not to mention the revival of natural science at Cambridge by Isaac Newton, the beginnings of textual criticism by Bentley, or the modern religious movements at Oxford of the Wesleys, of Pusey, and of Maurice, and fresh impulses in history, economics, and art by Oxford men like Arnold, Froude, Freeman, Green, Ruskin, and Morris.

The coalescence of the above historical influences will enable us to approximate the idea of the older universities as something immeasurably higher than the common characteristics seized by the casual observer. The latter is represented by the American professor who summed up the characteristics of Oxford and Cambridge under the three heads of the collegiate system, the tutorial instruction, and the long vacations. The university is in its broadest sense a spiritual (as the Germans say, a *geistlich*) institution. The greatness of the difficulty in grasping the notion of Oxford so appeals to some American college presidents, troubled because there is not a larger number of candidates for Rhodes scholarships, that they have asked the Rhodes trust to set forth the advantages of Oxford in a way that will be comprehended by the American student. The task will be a hard one for the trust so long as the American student is reared without knowledge of foreign institutions and flooded with flamboyant advertisement of home colleges promising him a short cut to education which will quickly pay him in dollars and cents. Perhaps the university idea can be caught through quotations from some English authorities. Dr. Tanner, testifying before the royal commission on the civil service, cites two short paragraphs as sum-

¹ Huber, "Die englischen Universitäten," vol. 2. p. 42.

ming up the opinion of the university senate on the general character and value of education given at Cambridge. One is:

The principle of freedom of choice, the wide range of study, and the character of the teaching, both literary and scientific, which is accessible to the students provide for the excellence and variety of their intellectual training.

The other is:

As regards the development of character, the conditions of life in the university and colleges are in a high degree favorable.¹

The answer of the hebdomadal council of the University of Oxford was reflected in the opinion of the then Vice Chancellor Heberden:

A university education teaches a man to think for himself, and I should like to add that that is an education which takes a long time. I think that you must have some years after a boy leaves school if you are really to develop his mind to the fullest extent, and in particular to teach him to think for himself. I think that combination of very big subjects, together with a great deal of very highly organized teaching, is what constitutes the benefits of a university education from an intellectual point of view.²

Lord Haldane in various ringing addresses brings out the thought of the corporate spirit of university life made manifest in "The Dedicated Life" of teacher and student and "the passion for excellence."³

Lord Bryce says:

There has been created in Oxford and Cambridge that impalpable thing which we call "atmosphere," an intellectual and social tone which forms manners and refines taste and strengthens character by traditions inherited from a long and splendid past.⁴

A writer in the *Edinburgh Review* states:

The idea of a university reaches far beyond a varied supply of professional training, the prodigal granting of degrees, the anxious encouragement of research and the politic performance of educational contracts. A university is something more than an engine of utility or a product of organization. The essence of a university is a spirit, a principle of life and energy, an influence. And that influence must be impoverished and robbed of efficacy if, owing to want of means, or want of ideas, or want of freedom, a university falls short of the great end of its being, that of caring for the spirit and mind of man regardless of considerations of utility.⁵

The same author adds:

What is a university? Most men would perhaps face with a more tranquil courage the task of defining a dreadnaught, which baffles "The Times," or that of defining the duties of an archdeacon, which once baffled the House of Lords. We may hold with Cardinal Newman that the true function of a

¹ Royal commission on the civil service. Minutes of evidence, 1913, p. 87.

² Ibid., p. 47.

³ "The Dedicated Life," address to students of University of Edinburgh, 1907.

⁴ "University and Historical Addresses" delivered during a residence in the United States as ambassador of Great Britain. Macmillan, 1913, p. 159.

⁵ *Edinburgh Rev.*, Jan., 1911, p. 58.

university is to impart liberal culture, or with Huxley that a university should be a factory of new knowledge. But whatever our idea of a university may be, whatever theory of university education we adopt, whether we hold that it should aim at a complete training of the faculties or that it should prepare the student for the pursuits of later life, we shall no more conceive of a university in chains.¹

The American inheritance of this idea of the English university appeared in the words of President Wilson, when at Princeton: "I believe general training, with no particular training in view, to be the very heart and essence of university training." Instead of a university department store, where each student came to purchase a certain definite commodity, he pictured as his ideal one with the twofold object of "the production of a great body of informed and thoughtful men and the production of a small body of trained scholars and investigators," and these two functions were "not to be performed separately but side by side and informed with one spirit, the spirit of enlightenment."²

The two important points in the history of Oxford and Cambridge, the foci which have determined the ellipses of their peculiar orbits, are the sole degree-conferring power of the university proper, and the foundation of the corporate residential colleges. By the beginning of the fourteenth century jurists recognized as the essence of a university the privilege of conferring through its degrees the right of teaching not only in its own jurisdiction, but everywhere (*jus ubicunque docendi*). From that time no new university could acquire the right without a papal bull or a royal charter. One of the glories of these universities commonly overlooked is that they sprang from the people. Without bull or royal charter the jurists were forced to recognize them as *studia generalia ex consuetudine*. Lord Bryce puts it well:

These universities were not founded by any public authority, but founded themselves, springing up naturally out of the desire for knowledge; and hence we in England describe our two universities of Oxford and Cambridge as being "corporations at common law," i. e., deriving their legal quality as corporate bodies from ancient custom which antedates the time of legal memory.³

The retention of the power by the university only⁴ to confer degrees preserved it alive during the dominance of the colleges from the seventeenth to the nineteenth centuries, and has been the point of departure for the recent vigorous development of the university in contradistinction to the colleges. If this tradition had been followed in the United States, how many abuses and degree-spawning institutions might have been escaped.

¹ Edinburgh Rev., Jan., 1911, p. 68.

² World's Work, Jan., 1906, p. 9795.

³ University and Hist. Addresses, *supra*, p. 154.

⁴ One or two colleges at Oxford and Cambridge are said to have a dormant right to confer degrees. The affiliated college of St. David's, Lampeter, may confer the degrees of B. A. and B. D.

In the thirteenth century the number and poverty of teachers and students, improperly housed and supported, appealed to pious benefactors like Walter de Merton. His tomb in Rochester Cathedral reads, "Founder by example *Omnium quot-quot Collegiorum*." He had the first real idea of a college as an endowed self-governing and self-disciplining community of scholars in their own house. The statutes (1264) of Merton College became the model for colleges in both Oxford and Cambridge. In time the colleges decentralized the universities and indeed changed their system of education. They have brought about the idea that a university is merely a multiplication of colleges and its definition as a "collection of institutions of learning at a common center."¹

The intricacy in scope of organization and operation of Oxford and Cambridge may be represented by seven concentrate spheres. At the center the specific university with its own funds and property, professors, readers, lecturers, examiners, boards of studies, certain powers of discipline, and the sole power of conferring degrees. It awards certain university scholarships, studentships, and prizes. It administers some 30 libraries, museums, laboratories, and workshops, and observatories in each.²

The second sphere consists of the autonomous colleges, with their own property and government, which are incorporated in the university. The 21 of these colleges at Oxford and the 17 at Cambridge, with imposing buildings and old-world gardens, make the few university structures inconspicuous, and become the visible university to the casual observer.

The third sphere consists of colleges, halls, and hostels, not incorporated in the university, some with semiofficial and others with scarcely a recognized relation to the university.³

The fourth sphere is represented by the University Press, an important and profitable agency at each university, managed by the university with even pecuniary profit, though its prime object is the promotion and diffusion of learning. Despite jealous attacks in the sixteenth century and after, from the newly incorporated stationers company in London,⁴ and the vigorous competition of the great publishing houses of the present day, the University Press, at Oxford

¹ Cf. Ch. IX, "Organization and Administration of Universities," p. 159.

² In the university, apart from similar institutions in the colleges, there are approximately at Oxford 9 libraries, 2 large museums, 14 laboratories, and 2 observatories; at Cambridge 14 libraries, 2 large museums, 13 laboratories, and 2 observatories.

³ Of these there are 18 at Oxford: St. Edmund Hall, 8 private hostels, group of non-college students, group of training college students, the 5 theological institutions (Wycliffe Hall, Pusey House, St. Stephen's House, Mansfield College, Manchester College), 6 women's colleges and societies, and Ruskin College (Cf. Ch. XIX, pp. 251-52). At Cambridge there are 11: Selwyn College, Fitzwilliam Hall for noncollegiates, 1 training college for men and 1 for women, 5 theological institutions (Ridley Hall, Westcott House, Westminster College, Chestnut College, St. Edmund's House), 2 women's colleges.

⁴ "A Short Note on the Cambridge University Press," 1911, p. 8.

through the gift of Clarendon, and at Cambridge of Pitt and others, has been kept independent of mercenary motives and maintained scholarly standards. They have made a university press a mark of a first-class university as distinguished from a collegiate institution, and herein are teaching a valuable lesson to their American sisters. The stimulation in the teaching staff of the spirit of research and publication rounds out the fourfold function of a university to preserve knowledge, to teach men, to advance truth, and to diffuse it.

The first four spheres are intramural or at least local. The press connects them with the three extramural spheres of the university's activities.

The first is that of the examinations, local and higher and school, conducted outside the university, and the inspection of schools.¹ Herein the universities recognize their obligation to the entire field of education, and in the inspection of schools their natural position as the apex of a school system still in the process of formation.

The second extramural sphere is that of university extension recently notably varied in the formation of tutorial classes.² In this direct instruction of the populace in immediate cooperation with the industrial classes the universities respond to the demands of modern democracy. Herein is popular proof of their nationalism.

The seventh concentric sphere, the third extramural one, is that of affiliated universities throughout the Empire and of certain recognized institutions beyond its bounds. The Universities of Oxford, Cambridge, and Dublin have the most intimate relationship, by which the members of these universities have the privilege of "incorporation," i. e., under certain conditions they may be admitted to the same status and degree which they hold in their own university.³ Affiliated institutions are the universities and some university colleges in the United Kingdom and certain Indian, colonial, and foreign institutions, including some 20 in the United States. Members of these institutions may be admitted to the universities with exemption from admission, and on certain conditions from some advanced, examinations and with the privilege of proceeding to the B. A. degree in two years.⁴ In this sphere one sees the imperial and the international outreach which the Empire builder, Rhodes, recognized. By his scholarships at Oxford he sought to strengthen these features, and by awarding them to Germany as well as to America he hoped to promote a Teutonic university leadership for the federation of the world.⁵

¹ Cf. Ch. XVI, "Examinations," p. 223.

² Cf. Ch. XIX, "University Extension Teaching," p. 249.

³ Oxford University Handbook, Clarendon Press, 1912, p. 22; the Student's Handbook to the University and Colleges of Cambridge, University Press, 1912, p. 42.

⁴ Oxford Handbook, *supra*, Ch. XI; Cambridge Handbook, *supra*, pp. 306, 312.

⁵ Cf., p. 40.

The vast network of the organized activities of the universities that have been depicted may give some idea of their extent and content but fails in expressing their influence. The positions of influence their graduates occupy in church, state, and society are reinforced by the practical ramifications of the universities in their representation in the governing boards and faculties of schools, colleges, and universities, and boards of education. They may be said to leaven the educational lump.

This conception of the ancient universities, "so historical in their character and so majestic in their influence," runs counter to a widely spread American and English notion of them as decrepit and retrograde, a notion not without some basis in fact, as a long line of university reformers testifies. The lofty conception, however, has well been made the point of departure for the latest campaign of reform by Lord Curzon, of Kedleston, the present chancellor of Oxford.¹ He writes:

A fourfold duty lies upon it [Oxford]: To provide the best teaching over the entire field of knowledge of which its own resources and the progress of science may admit; to offer this teaching to the widest range of students; to mold and shape them not merely by the training of intellect, but by the discipline of spirit, so that, wherever they go, they may be worthy citizens or worthy servants of the state; and to extend by original inquiry the frontiers of learning. In other words, we desire that Oxford should supply a focus of culture, a school of character, and a nursery of thought. Always a responsible, this has become a doubly momentous task since, by the endowment of the late Cecil Rhodes, Oxford has opened its gates to the Empire and to the world, as well as to the nation; and since whole classes of the nation hitherto excluded or dormant are now themselves knocking for admission. At such a time we may well review our own position, endeavor to sweep away any obstacles that impede our progress, and start again, reinvigorated, upon our path.

Lord Curzon summarizes his main objects of reform as follows:

(1) To strengthen and popularize the internal government of the university; (2) to fortify the authority of the latter in the control of its own teachers and teaching, with due regard to the rights and interests of the colleges; (3) to remodel the conditions of entrance, so as at the same time to furnish a moderate test of educational fitness, and yet not to exclude those who are unable to pursue the study of Greek;² (4) to provide for the distribution of academic endowments with relation to the requirements of the university; (5) the encouragement of advanced study; (6) and the needs of poor men; (7) to facilitate by all reasonable means the admission of the last-named class to Oxford; (8) and to create a better system of financial accounts and financial control.³

¹ Curzon, Lord, of Kedleston, chancellor of the university, "Principles and Methods of University Reform," Clarendon Press, 1906, p. 210.

² Cf. Ch. XVI, "Examinations," pp. 230-231.

³ Principles and Methods of University Reform, being a letter addressed to the University of Oxford, report of the hebdomadal council, with an introduction submitted on behalf of the council by Lord Curzon, of Kedleston, chancellor of the university, Clarendon Press, 1910, p. vii.

During the 16 months succeeding Lord Curzon's "letter," at Oxford facetiously called "the scarlet letter," as it was bound in red, the hebdomadal council, or committees of it, held 128 sittings, over many of which the chancellor presided in person, and brought in nine reports along the lines of the chancellor's recommendations. After five years the objects of two or three of these reports have been accomplished. Congregation has been converted from a body of resident graduates in Oxford into one consisting of the teaching and administrative elements in the university and the colleges. The next step restoring to the administrative and teaching staff powers in educational matters was the constitution of a general board of faculties. Other important educational advances have been provisions for the granting of certificates in letters and science to women, for certificates in French and German, and establishing a school in modern history. The setting up of the finance board is a powerful instrument for the unifying and development of the central university. Its duties are to review annually the published accounts of the university and of all its institutions, including the public accounts of the several colleges; to prepare annually a statement for council showing total receipts and expenditures; and especially to exercise advisory powers for the council and governing bodies even of the colleges.

There has been a distinct defeat of the scheme for the substitution of an entrance examination for "responsions" or a modification of "responsions" and the abolition of compulsory Greek and of a measure for a diploma in commerce. No changes have been effected with reference to the admission of poor students to college scholarships, exhibitions, and fellowships, or the lengthening of the academical year. The chancellor's suggestion for what he called "the final emancipation of the theological faculty and degrees," by the abolition of the last survival of the ecclesiastical test requiring membership in the established church, was carried through council and congregation. Its rejection by convocation created such a sensation that the question was raised in the House of Commons of the appointment of a royal commission on the universities. At that time the prime minister stated that he greatly deplored the recent decision of convocation. "He had, though reluctantly, come to the conclusion that in the existing circumstances the setting up of such an inquiry might lead to delay in the prosecution of necessary reforms, and not be likely to be productive of fruitful consequences."¹ The strength of feeling behind the admission that there are "necessary reforms" may be gathered from vehement expressions from widely different sources. Lord Curzon had written:

We are told that Oxford is a place where the standard of living is high, and that of learning low; that it is the resort of idlers and loafers; that its

¹ The Times, May 6 and 8, 1913.

endowments, intended for the poor, are wasted upon those who do not require them; that it is out of touch with the main system of national education, of which it ought to be the apex and crown; and that it is in fact the university of the leisured classes instead of the nation. Even Bishop Gore did not shrink from describing it in the House of Lords as "a playground for the sons of the wealthier classes," and as not in any serious sense a place of study at all.¹

At a conference of trades unions and other societies opinions were expressed to the following effect: Little faith is put in the educational program of the Government so long as it refuses the request of the parliamentary committee of the trades union congress to call a royal commission for the purpose of inquiring into the question of university endowment.² The necessity was urged to push forward two reforms simultaneously; on the one hand to open the universities equally to all classes, on the other to reform the curriculum so as to make the benefits of a university education as great as possible. The question was asked if the university endowment had not been robbed from the working class, and it was answered that the ancient endowments for education to some extent had been plundered at the time of the Reformation, and subsequently the benefit that remained had been almost entirely monopolized by the wealthy class.³

The feeling for the necessity of reform has been intensified in academic circles by the defeat in congregation at Oxford (June 16, 1914) of a form of statutes extending the option of subjects which may be offered in "responsions," and providing that the examinations should be conducted by the delegates for the inspection and examination of the schools.⁴ The attempt to deal with the urgent problem of correlating the universities with the secondary schools and to broaden the avenue of approach to the university for all classes of students is involved. The hint is given looking to a royal commission that "if the universities can not do this of themselves it is likely that it will be done for them. In any case, the matter can not be left where it stands."⁵ The present is the culmination of the large powers given to the universities to reform themselves from within by the parliamentary act of 1877 and its commission of 1882. The slowness with which the universities have moved has stirred up groups of reformers in each of them. Doubtless they have been the occasion of the recent movements. Lord Curzon, when a new chancellor visiting Oxford in 1907, testified that hearing many opinions in the university he was led to think that he might be of some use in coordinating the plans that were in the air.⁶ This reference

¹Curzon, Lord, "Principles and Methods of University Reform," p. 42.

²Report of the conference of trades unions, etc., held at Newcastle on Tyne, Apr. 15, 1913. Co-op. Printing Soc. (Ltd.) London, pp. 6-9.

³Cf. Ch. XVI, "Examinations," p. 230.

⁴Daily Telegraph, June 30, 1914.

⁵Curzon, Lord, "Principles and Methods of University Reform," *supra*, p. 11.

is doubtless suggestive even of organized clubs for reform at both of the universities, and perhaps particularly of the club of which we learn in the *Life of F. York Powell*,¹ then student of Christ Church, and afterward regius professor of modern history. At a meeting held in Exeter College in 1889, he presented the main points of the program for the the society to maintain the character of the university as a home of learning and science. The members were to take the professorial as distinct from the tutorial view, and the university as distinct from the college, in questions of education. They were to aim to have the examination system kept within limits rather than extended; to have the Bodleian Library managed as a place of study and research; to act on academical, not on purely political, grounds in voting for council, etc. In 1905 the immediate program for the club dwelt upon consideration of steps to coordinate university and college claims, especially in respect of science teaching and laboratories, in accordance with suggestions by Prof. Gotch. When Bishop Gore, in the House of Lords, moved for a new university commission, to the surprise of the universities, a letter appeared in *The Times* (July 24, 1907) declaring that many senior members of the university as well as younger graduates held the following opinions:

(1) That the constitution and machinery of Oxford, both legislative and executive, need revision. (2) That the relations between the university and the colleges, both constitutional and financial, require modification. (3) That a central direction of our studies is required, enabling the faculties to have the authority assigned to them in other seats of learning. (4) That the studies of the university are themselves too narrow in scope, and that fresh endowments of various branches of study are necessary, and especially that a greater encouragement should be given to research, which at Oxford is probably to a larger extent divorced from teaching than in any other university.

They assert:—

Attempts to reform from within have again and again proved abortive, owing to our present constitution, which can only be modified by legislation. We therefore consider that either a fresh commission or, if that suffices, legislation by the King in council, as contemplated by the last commission, are the only practical ways of carrying out the necessary changes.

Despite the focussing of the agitation for reform by the chancellor's letter of 1909 and the reports of the council in 1910, the progress was so slow that, according to *The Times*, a memorial was presented to the chancellor in May, 1912, in favor of a royal commission. The general argument appeared to be that the inquiry which the university had conducted prepared the way for one of a more systematic and comprehensive character. An "outside" as compared with an "inside" commission might be more impartial, though naturally the

¹ Nettleship, Henry, "*Life of York Powell*," with preface by Farnell; cf. Ch. XIX, "*University Extension Teaching*," p. 251.

reference of such a commission should be limited. The argument was pursued that the university is not a single corporation, but in many important points only an aggregate of some 20 more or less independent corporations, and in fact a university of colleges. That the university in order to be master in its own house would need to have a voice in the award of college fellowships and scholarships, in the adjustment of the action of the colleges to the needs of the university as a whole, and control over the admission and the residence of students.¹ Absolute power for the university was not sought. The college system was to be preserved as a characteristic and valuable asset of the university. But it was urged that the system had "the defects of its qualities," and that it could not be expected that the colleges would be able to systematize themselves. The failure to come to an agreement with reference to fellowships and the rotation of scholarship examinations was proclaimed without exaggeration to leave little less than a state of open war in the competition between Oxford and Cambridge colleges, and among the Oxford colleges themselves. It was said the freedom of the colleges was one thing, their anarchy was another. The waste and inefficiency were complained of, due to the duplication by the colleges of their equipment and laboratories without consideration of the needs of the university as a whole. Finally, in the view of the petitioners, the cumbrous and piecemeal machinery of university legislation needed to be complemented by a royal commission which could deal simultaneously with every part of the university as an organic whole.

No attempt will be made to review the recent agitations for reform at Cambridge, dealing largely with the same problems as those at Oxford but not so publicly organized. In truth the modern history of university reform may be dated from the year 1800. In this year at Oxford was initiated the raising of standards of scholarship by the adoption of the new examination statute under the leadership of a great disciplinarian, Dean Jackson, of Christ Church, and at Cambridge the founding of Downing College, giving new emphasis to useful knowledge in conjunction with university culture. The literary revolution in England, the correlative of the French revolution, followed by the political reform issuing in the reform bill of 1832, resulted in various actions and reactions in the universities. They were stirred by criticisms beginning in the *Edinburgh Review* in 1808. Throughout the nineteenth century, and especially after the royal commissions of the middle of the century, the universities have slowly but surely adjusted themselves to the demands of the reformers. Indeed, it has been characteristic of them, when they did not lead an age, to conform to the demands of every age throughout

¹ Cf. Ch. XVII, "Curricula," pp. 232-233.

their long history, excepting in their period of stagnation in the seventeenth and eighteenth centuries, when they were dominated by the wealthy and aristocratic colleges. We have gone thus far into the subject of university reform because of the sidelights it throws upon our present-day problems, many of which are ever old and ever new. The excursion may also give us a better interpretation of the universities and their scope. It is clear a wider meaning must be given to the phrase "university reform" than that of "making the universities as efficient teaching institutions as possible."¹

While it may be conceded that the universities as they now exist are primarily teaching institutions, the long line of prophets of university reform have given it a broader meaning. They have seen the vision of an all-round university adding to the teaching and character training of the college, learning, research, the application and diffusion of knowledge, the service without distinction of class, of humanity, in all its units of social organization. The point of university reform is to correlate and coordinate in the central university the seven spheres of activity to which we have earlier referred in the interest of the greatest economy and efficiency.

The lessons for us are obvious—a university is different from a college not only in degree but in kind.² A college in its sphere is no whit inferior to a university, and being of a different genus it should not attempt to be a miniature university. Its prime function is instruction and still, standing in loco parentis, character training in an atmosphere of generous culture. The original New England college, planted by Cambridge and Oxford graduates upon the model of the English college, then dominant in the university, with its vigorous offshoots in the Middle and Western States, perpetuated the best features of this type and has become a glorious characteristic of American education. Like its first parents, it has well maintained its independence. It now needs to learn from them that it should become a unit in an educational system related to the schools below it and federated with the universities above it.

In the newer States, where it is still practicable, the independent colleges might well follow the Oxford and Cambridge model and plant themselves in the same town with the university. Where it is too late to do this, the spirit of the Oxford and Cambridge plan may be preserved not only by the colleges grouping themselves in college unions, according to their church or similar interests, but also by direct affiliation with universities. The isolated independent college is an expensive and uneducational anomaly. If the American college can not be locally a part of the university, it needs, and the university needs, that it should be spiritually embodied with it.

¹ Tillyard, A. I., "A History of University Reform," Cambridge, 1918, p. 292.

² Cf. Ch. V, "Independent University Colleges," p. 130.

The ideal of a liberal education for which the American college stands is enforced by the example of all the British universities new and old in requiring the incorporation in the university of a liberal arts college. A university consisting only of professional schools would be a violation of the fundamental idea and unbroken tradition of a British university. The so-called superior faculties of theology, law, and medicine do not segregate themselves, but sit together with the various schools of the arts faculty in council and congregation. Their courses of study and their students are interspersed with those of the arts. The arts faculty does not deem itself inferior to the faculties superior in order of the time of their work. Its work is not demeaned by following its historical mission *inter alia* of being preparatory to professional studies. It rejoices to lay the broad foundation upon which rest the rising platforms of the pyramid of professional learning.

The college as an essential part of the university in Oxford, Cambridge, and Durham, impresses the lesson that many American universities departing from the English tradition under the influence of continental institutions need to learn, namely, that character building is an aim of education to the very end. Maturity and citizenship in the university do not absolve from law, but like every other citizenship must develop its manhood code of law and have a discipline to enforce it.¹ The college shows that the best means to this end, which is reenforced by the prominence to-day of the social element in education, is the provision of halls of residence.²

For any fair understanding, however, of the universities, two remarks must be made. First, contrary to the general notion, the relative poverty of the universities and their colleges as a whole hampers their advance. The productivity of their capital has decreased with the depreciation of their real estate investments and the increase of taxes. They are not able to redistribute their funds, locked up in trusts and earmarked for special purposes, so as to meet the changing demands in education. Herein is a warning for the boards of investment of our newer institutions, and particularly for their benefactors, not to tie up their gifts without giving discretion to governing boards. It is a surprise to find in Britain that pecuniary needs induce a competition between universities and among colleges, and a fear of being undersold, which prevent an advance of standards of examinations. Notably the universities give the M. A. degree without any academic requirements, because they feel they can not afford the loss of income from fees. Likewise the need of the charges to keep the names of graduates on the university books and the college boards halts the changes widely advocated in convocation.

¹ Cf. Ch. XVIII, "Student Life," pp. 240-242.

² *Ibid.*, pp. 244-46.

Second, the source of the student constituency affects the entire complexion of the universities. For several centuries the nobility, the professional, and upper-middle classes through the training of the famous "public schools" supplied the undergraduates. The peculiar glory of English education and the dominant factor in the undergraduate life of the universities has been the "public school," with its classical and character training, modeled from the close of the fourteenth century upon William of Wykeham's college at Winchester, which was specifically to train for the university. The spirit of Wykeham's motto, "Manners makyth man," has taken possession of all the "public schools," and through them of the university colleges.

There are about 600 of these schools, of three or four different types, in the incorporated Association of Head Masters. Some hundred of the great and older "public schools," like Winchester and Eton, because they send so many boys to the older universities, group themselves in the Head Masters' Conference. Of the remaining 500 schools, some are ancient grammar schools, some are smaller boarding schools of more modern foundation, and some are great day schools, like St. Paul's. In addition to the continuance of the customs and friendships of these schools among the undergraduates in the universities, there is the influence of their head masters upon the policies of the universities. The long period of study in these schools and the selection of sons of parents of social standing able to bear the considerable expense establish a corresponding and costly style of living in the university. This fact gave ground for comment like that of the late Dr. Draper:

American universities can not follow the British university with its narrow, purely classical, and purely English scholarship, which is studiously prevented from being broadened by that fatuous policy of the ruling classes which stubbornly refuses the organization of all secondary schools through which the only people who can broaden it may come to the university at all.¹

The grounds upon which Dr. Draper's remarks rested have been rapidly shifting under the pressure of the series of educational acts, beginning with that for elementary education in 1870. Recent legislation, parliamentary and local, especially since the report of Lord Bryce's commission in 1895, has revived certain ancient foundations, particularly "in grammar schools" as dual schools, and developed municipal secondary schools. Thomas Arnold, at Rugby, in the first half of the nineteenth century had begun the reform of the "public schools" in morale, and in informing the instruction with the modern historical spirit. Further impelled by the advances of the material sciences these schools have added the modern to the ancient

¹ Draper, Andrew S., commissioner of education of State of New York, "American Education," Houghton, Mifflin Co., 1906, p. 128.

classical side. Before the act of 1870, Matthew Arnold, having caught in Germany the vision of the importance of the secondary school, was preparing the way for its spread in England. As a sequence of the above movements we have in 1912 on the roll of the "Incorporated Association of Head Masters" 552 head masters of secondary schools, in the broad sense of a school administered under a definite form of public or corporate control recognized by the board of education under regulations for secondary schools.¹

The pupils of these schools are becoming a force second only to those of the "public schools" in their effect on the undergraduate life of the universities.² Their modern traditions and their increasing numbers must tell. Of the total of 220 scholars and exhibitioners entering Cambridge in 1911-12, only 84 came from the great "public schools," as compared with about 100 from the great day and various kinds of secondary schools.³ Other student movements changing the complexion of the universities, and tending to develop the university independent of the incorporated colleges, are the attendance of women,⁴ the admission of Rhodes scholars by passing "responsions" apart from college examinations, and the increase of the sons of artisans, due to the agitation for the higher education of workingmen.⁵

At this point one is confronted by a standard view of the older universities that they are to remain unique to educate gentlemen in the sense of those of the leisured classes. They are not to be popular. They are to minister not only to "the quality," but to care chiefly for quality of scholarship and mind and not for average ability.⁶

In short, as contrasted with the newer universities, they are not to be cheap, popular, or industrial. This view is fortified by the existence of classes in England and is diffused ordinarily by foreign writers on English universities. Whatever element of truth is in these statements, which in certain aspects are certainly un-American, may they not contain a hint for the American college against excess of zeal in stimulating the attendance of inferior minds and the production of an educated proletariat?

It must be noted, however, that the two universities have presented evidence to the royal commission on the civil service that the sons of toil and poverty, with ability, have means provided to attend the university. They refer to assistance made by the local authority to the boy of real ability in the secondary school, and to the numerous

¹ Royal commission on the civil service, 1913, p. 128.

² Cf. Ch. XVIII, "Student Life," p. 240; Ch. XVII, "Curricula," p. 233.

³ Royal commission on the civil service, 1913, p. 116.

⁴ Cf. Ch. VIII, "Women's Colleges," pp. 152-54.

⁵ Cf. Chs. XII, "State Aid and Visitation;" XIV, "Applied Science and Professional Education;" XIX, "University Extension Teaching."

⁶ Cf. Ch. XVII, "Curricula," p. 236.

scholarships and exhibitions available in the universities, to the amount of about \$300,000 at Oxford and \$285,000 at Cambridge, annually. Oxford awarded to students beginning residence in October, 1911, entrance scholarships and exhibitions to the value of \$118,360, and Cambridge to the value of \$100,890. In addition, various helps are offered to men of slender means. The colleges reserve some cheaply rented rooms for poor men. Some colleges make reduced inclusive charges and by confidential arrangements gain reduced subscriptions to the more important undergraduate clubs. It is emphasized that at most colleges the tutors have a private fund to use at their discretion for loans to students who need help.¹ The provision of discretionary funds to be dispensed in a confidential way to deserving and needy students, not by governing boards, but by heads of colleges or teachers in personal contact with the students, is a practice that should be greatly enlarged in the United States. Brasenose College, at Oxford, furnishes an illustration of the care as well as the confidential way with which these funds should be dispensed. When men apply for certain valuable scholarships of \$500 a year which are confined to men of limited means, a paper of questions is sent to the parent asking, "What is your professional income?" "What is your private income?" "How many children have you?" Strong emphasis is put upon having a fund in addition to scholarships from which grants of money are made privately—at any rate not after advertisement—to students in need of assistance.²

Amongst various changes proposed for scholarships, it is clear that at neither university will anything receive general favor that would make distinctions between classes resting solely on wealth. While these scholarships may be won by rich men, the majority of scholars are the sons of professional men usually of limited incomes. These points should commend some form of scholarship system to objectors against scholarships in American colleges. Despite some of the evils of competitive examinations and of rivalries between both schools and colleges the problem is the same on both sides of the Atlantic. This is a case in which Americans may perhaps wait upon the experiments made in England. The commission of 1850 thought that they had solved the difficulty by substituting open, with certain exceptions, for the close scholarships and exhibitions conferred from medieval times upon students from particular schools, localities, or families connected with the founders. The commission of 1877, retaining the open competition, moved in the direction of the equalization of the value of scholarships and of making exhibitions

¹ Royal commission on the civil service, 1913, pp. 114, 127. Cf. Ch. XVIII, "Student Life," p. 244.

² Royal commission on the civil service, 1913, pp. 48, 49.

on the whole eleemosynary. Various experiments are being tried and propositions considered by some colleges in conference. Success from the nature of the case will fully come only when there is concerted action among the colleges and by the universities. American universities and colleges may well profit by this same suggestion of conference and agreement with reference to a scheme of scholarships.

American donors of scholarships may well be taught not to tie up their funds too specifically by the freedom with which parliamentary commissions have redistributed the gifts of benefactors to meet the changing conditions of different ages. Nevertheless, at this moment complaints are made of the predominance of scholarships for the Greek and Latin classics and the meager provision for other subjects. In 1907-8 at Oxford, out of a total of 504 scholarships 300 were for classics, and of a total of 230 exhibitions 120 were for classics.¹

One of the oldest and most characteristic features of Oxford and Cambridge is the system of fellowships.² The fellows were the graduates, just as the scholars were the undergraduates, of the almost monastic medieval colleges. The founders of the fellowships intended them primarily for the advancement of learning and only incidentally for teaching. The royal commission in the middle of the nineteenth century found about 550 fellows at Oxford and about 400 at Cambridge, appointed largely by favor, all necessarily celibates and in holy orders with a life tenure and mostly absentees from the university. They opened the fellowships to general competition, but the clerical and celibate restrictions and the life tenure remained until the reform of the commission of 1877 prevailed in the statutes of 1882.

The last commission established four classes of fellowships: "Official or tutorial," held ex officio by members of the teaching and administrative staffs of the colleges; "professorial," held ex officio by professors of the university; "research," tenable for seven years, but generally renewable on condition of undertaking some prescribed work of research, study, or service to the college or university, the stipend of these to be \$1,000 annually, with certain college privileges; "prize" fellowships, awarded after examination, free from any condition of work, tenable for seven years, and of the same value as the last class. The commissioners' statutes limited the number of the first three classes and intended that about 170 "prize" fellowships should ultimately be provided at a cost of something like \$175,000 per annum at Oxford.³ The "prize" fellowships were

¹ Curzon, Lord, of Kedleston, "Principles and Methods, etc.," 1909, p. 77.

² Cf. Ch. XV, "Advanced Study and Research Without Graduate Schools," pp. 215-16.

³ Report of the hebdomadal council (Principles and Methods of University Reform), 1910, pp. 76, 77.

to be in fact, Lord Curzon says, "as the name indicates, the apotheosis of the theory that a fellowship is a reward of ability rather than a condition of service," and further a link, as Jowett believed, between the residents of Oxford and the outside world. The expectations concerning the "prize" fellowships it is generally agreed have failed of realization. The colleges have never begun to fill up the number, and on the whole the fellowships have become unfruitful sinecures. Substitutes for "prize" fellowships were recommended by the hebdomadal council in 1910, but they have not yet been adopted.¹

For the general scheme and the bearing of the whole subject of fellowships we must refer to our chapter upon "Universities and Research" (p. 214). The lesson for Americans of the story of "prize" fellowships is that good and learned men, alas! yield to the temptation of indolence without the pressure of some supervision, and that some residential requirements in and service of a university are desirable. By this inference it is not meant to say that there is not, in exceptional cases, room outside the universities for foundations to reward and employ ability in investigation and research, as in the Rockefeller Institute for Medical Research, or in the Carnegie Institution of Washington, or State and municipal institutes and research laboratories. These establishments furnish the element of supervision lacking in prize fellowships. Fellowships, an essential part in the ancient foundations of the colleges, strictly applied to the promotion of specific subjects, services, or persons, have undergone changes to meet the demands of the times. They have been shifted not only to make prize fellowships but to serve for pensions (see p. 186), for research, and very largely for part payment of teaching or other college work. The radical suggestion has even been made to abolish fellowships, retaining the title of fellow because of its historical associations and commercial value in the outside world.² There is little likelihood of such a proposition being entertained in responsible quarters, but continued readjustments and coordinations of the fellowships may be anticipated.³ Fellowships are the core of the colleges, not only historically and governmentally but at present actually, numbering approximately 400 at each of the universities and having an annual income apart from fees and other stipends estimated at each university as between \$300,000 and \$350,000.⁴ The history of fellowships at the two universities justifies the widespread creation of fellowships in the newer universities of the English-speaking world. But warned by that same history, these universities

¹ Report of the hebdomadal council, 1910. pp. 84-88. Also cf. Tillyard, p. 835.

² Tillyard, p. 839.

³ Cf. Curzon, pp. 98-100; also report of hebdomadal council, pp. 78-88.

⁴ Cf. Curzon, p. 96. Hillyard, p. 331.

have felt the need to safeguard against favoritism in methods of appointment, to limit the tenure of office, to fix a just emolument, and to appeal to a love of learning and of public service while courting a reasonable degree of supervision.

Thus far the two older universities have been treated in common. Nor is it desired now to any extent to differentiate them. Up to the last century Dollinger's remark held true:

England, pursuing throughout its whole history the twofold aim of practical activity and political freedom and hostile to all centralization, has confined itself to two universities, two learned corporations which have preserved down to this day their republican constitution and autonomy. A single university would have become too exclusive, too much of a monopoly, and ultimately would have gone to sleep on the pillow of its privileges and traditional honors. But the two watched each other and stimulated each other, and each of them specially cherished one of the two main tendencies of the English mind—Oxford the ecclesiastical and the disciplines subserving this, Cambridge the mathematical and more practical aims.¹

Attempts to differentiate Oxford and Cambridge by means of broad generalizations have been made by numerous writers as well as in current popular stories and phrases. Matthew Arnold named Cambridge the mother of great men, and Oxford of great movements. George Eliot said that at Cambridge everybody spoke well of everybody else; at Oxford everybody criticized everybody. Lord Roseberry expressed it:

Oxford and Cambridge impart, or did impart, a distinctive character to their men; they had a marked division in politics as well as in learning. Oxford had the traditional and reverential, Cambridge the inquiring or testing spirit.²

President Thwing³ approaches the distinction by making Oxford and Cambridge one of the four classes into which he boldly divides the universities of the world, with the saving clause that the characteristics of all four classes are more or less in every university. In his first class he places the German universities devoted to the discovery and publication of truth, to learning and scholarship, with libraries and laboratories as tools, and observation as their method. The universities in Scotland and the United States constitute the second class, whose primary purpose is the development of character through the power of thinking. Scholarship has a less dominant place. The aim is rather intellectual and ethical. In the third class are Oxford and Cambridge and certain American colleges. The real purpose, though not the object of public proclamation, is the making

¹ Dollinger's "Universitäten Jetzt und Sonst," in S. S. Laurie "Rise and Constitution of Universities," 1886, pp. 244-245.

² Roseberry, Lord, "Chancellor's Address, University of Glasgow, 1908," MacLehose & Sons, Glasgow, p. 16.

³ Thwing, Charles Franklin, "Universities of the World," Macmillan, 1911, p. xi.

of a gentleman in whom intellect, heart, conscience, will, and the æsthetic faculty are so blended that he becomes at home in any society. The universities of the Far East represent the fourth class, and here President Thwing would probably have inserted the newer universities which train men of efficiency, graduates able to earn a living. This efficiency is like that of professional schools and schools of engineering, but of a liberalized sort, touched by the thought of living in large relations. President Thwing¹ notes some of the popular remarks. Oxford says, in depreciation, Cambridge is democratic, but Cambridge takes it as a compliment. Cambridge says, deprecatingly, Oxford is ineffective, but Oxford takes it as a compliment. Oxford hugs Greek grammar closer than Cambridge, and Cambridge points to its Cavendish laboratory as the most significant place in scientific discipline in Britain. He adds the Oxford colleges are governed more by their heads and the Cambridge colleges by their fellows.

The universities are hit off by many facetious remarks, such as, "The Oxford man acts as if all the world belongs to him; the Cambridge man as if he belonged to all the world." One Cambridge student shouted to another striding somewhat loftily across the court of Trinity, "Hi, where did you get that Oxford manner?" If one were to yield to the fascinating practice of making generalizations, he might add many to the above. He might say Oxford is progressive-conservative, Cambridge is conservative-progressive. Oxford is preeminently classical, Cambridge is preeminently scientific. Oxford is philosophical, Cambridge is poetical. Oxford tends to make statesmen, Cambridge to make scholars. Oxford contributes leaders at home, Cambridge pioneers abroad. An American perhaps feels more at home in Cambridge, because it may be more democratic. or because it is the mother of American colleges through the New England Cambridge. He can not forget, however, when in New England in the seventeenth century there was the highest proportion of university graduates to the population the world has ever known, besides Cambridge men there were "Oxford men not a few." An American visiting the universities back and forth, if asked which he likes the better, may well reply, "The one I was at the last."

The universities are the closest of friends, with a community of interests and of teachers consisting of graduates of the one or the other, rarely taking any step without consideration of its effect on both institutions. There is a good-natured competition of the Christian sort urged in the text, "Provoke one another to good works." There is care upon the part of one not to express an opinion about the other. Their independence through endowments, their self-gov-

¹ Thwing, Charles Franklin, "Universities of the World," Macmillan, 1911, pp. 10-12.

ernment, their representation in Parliament, and weight of influence generally have made them almost a fourth estate in the realm. They make it clear that endowed and autonomous colleges have a place as counterweights to State institutions. Nor should it be forgotten in the States how influence has been heightened not only by the cooperation between the two universities, but also contrary to their earlier policies by association with the newer State-aided universities.

Evidence is not lacking that Cambridge is conservative-progressive with progressive-conservative Oxford as a close second. The terms are used in a much broader sense than politically, though for years in parliamentary representation Oxford was predominantly Tory, and Cambridge Whig. Generally Cambridge has antedated Oxford in the introduction of new subjects of study, or the stressing of them in triposes known at Oxford as honor schools.¹ Cambridge rounds out its dozen of triposes with the establishment of an anthropological tripos in 1913, this doubling the number of triposes since 1875. Oxford has nine more or less correspondent honor schools, not counting as separate schools the eight subdivisions of the natural science schools.² The sole tripos at Cambridge until 1815 was the mathematical, and the honor school at Oxford still significantly known as "Greats" was *Litterae humaniores*. In the beginning at Cambridge the ancient quadrivium seems to have had the upper hand, naturally preparing the way for the mathematical, natural, and applied sciences triposes. At Oxford the trivium similarly held sway, naturally tending to produce, as grammar largely meant Latin, the *Litterae humaniores* school and possibly the conservative spirit characterized in Browning's Grammarian. The multiplication of studies and the recognition of them in honors demonstrates the steady advance of the universities with the times, but ordinarily with Cambridge as the path-finder.³

The sensation of the year 1913 at the universities was the abolition of the last relic of ecclesiastical tests by the opening of the divinity degrees to all denominations at Cambridge and the defeat of a similar measure at Oxford. While Cambridge has given the highest

¹Cf. Ch. XVII, "Curricula," p. 234.

²(1) Physics, (2) chemistry, (3) animal physiology, (4) zoology, (5) botany, (6) geology, (7) astronomy, (8) engineering science.

³Omitting the original tripos or honors school, and taking them in their present form, their dates and succession would be approximately as they are here given: 1815, law, Cambridge; 1900, Oxford; 1824, classical, Cambridge (N. B., following the original mathematical as conversely at Oxford the mathematical followed the *Litterae humaniores*); 1851-1856, moral sciences, natural sciences, and the theological, Cambridge; natural science, 1858, law and modern history, 1873, modern history separate, 1870, theological, Oxford; 1875, historical, Cambridge; 1878, Semitic languages. 1879, Indian languages, 1896, amalgamated in the oriental languages, Cambridge; 1896, oriental studies uniting (earlier 1887) Indian and Semitic, Oxford; 1886, medieval and modern languages, Cambridge; 1896, English language and literature separate, Oxford; 1894, mechanical sciences, Cambridge; 1903, modern European languages, Oxford; 1906, economics, Cambridge; 1913, anthropological, Cambridge.

recognition to applied science, culminating in a mechanical sciences tripos since 1894, Oxford made engineering science the last of the eight subdivisions of the natural science honor school only three years ago.¹ The preeminence of Oxford in Greek and Latin classics, philosophy and history is due to the dignity and distinction attached to the final classical school as compared with those given to the mathematical tripos in Cambridge. Cecil Rhodes furnishes an example of the fruits of the Oxford course in attributing the keynote of his life and the inspiration of his founding of his scholarships to the maxims of the Greek philosophers with which Oxford had imbued him. The Oxford record in no sense derogates from Cambridge's contribution to textual criticism and philology from the days of Bentley or to modern philosophy from the days of her great sons, Francis Bacon and Isaac Newton, and its school of neoplatonists.

Oxford, more than once the royal capital and on the great high road to the north, possibly was better located to breed statesmen than Cambridge on a by-way into the fen country. If so, the quiet and dreamy horizon of the fens might bring a compensation favoring the rearing of poets. The fame of Spenser, Milton, Wordsworth, and Tennyson so adds to the luster of Cambridge that injustice may be done to Oxford, with its meadows, hills, and Matthew Arnold's and Clough's tree on the hill.

The location of both the "rus-urban" university towns, of about 50,000 inhabitants each, wonderfully picturesque with their meandering river banks and gardens, favors the leisure so desirable for the scholar and offers the beauty which appeals to the poet. A sense of the importance of picturesqueness of location with landscape, water-scape, and academic shade has so been conveyed to the most fortunate universities and colleges in the New World that an institution without a river, sea, or lake is almost inconceivable; and an institution can not rest until at least an artificial lake is made, as at Princeton. Even an Iowa farmer once said there could be no real university without the picturesque surrounding of hill, river, or wood, no matter how grand the expanse of prairie.

Both universities in every generation have shown themselves "nests of singing birds." Let our American institutions in this age of science mark that science demands the creative imagination and poetry has its permanent place. Among the latest products of the universities are volumes of verse² of sufficient merit to vindicate the existence of a chair of poetry at Oxford. A critic says:

Taking the Oxford and Cambridge volumes together, we feel that those persons who are anticipating a new renaissance of poetry in England may take

¹ Cf. Ch. XIV, "Applied Science and Professional Education," p. 205.

² Oxford Poetry (1910-1913), with an introduction by Gilbert Murray, Oxford, Blackwell. Cambridge Poets (1900-1913), chosen by Alfrida Tillyard, Cambridge, Haffer.

courage from what they find in them. The Oxford poets bring evidence that the power of song is still alive among us; and the Cambridge poets, who are more mature, show further that their wings are capable of sustained flight, while both bear striking witness that the motive influencing our young poets is a desire to express some mood or thought with sincerity, rather than to imitate any fashionable style.¹

The critic credits the Oxford poets with more singing quality than those of Cambridge, though with less sense of form. The critic attributes the greater sense of form to the maturity of the Cambridge writers, but one may well query if it is not due to the predominance there of philological and scientific studies.

The pioneering spirit of Cambridge appears in its antedating Oxford in most of the extramural movements making for the nationalization of university influence. Both universities instituted local examinations in 1858.² The Oxford and Cambridge schools examinations board followed in 1873. University extension was formally launched by Cambridge in 1873 and taken up by the London society for university teaching in 1876 and by Oxford in 1878.³ Corresponding to Cambridge's leadership in attention given to the education of the masses is the recognition of women by the universities.⁴ The Cambridge local examiners began the informal examination of girls in 1863, and the local examinations were opened to them in 1865. Edinburgh and Durham followed in 1866, but Oxford waited till 1870. Girton, the first college for women at a university, settled itself at Cambridge in 1873, followed by Newnham Hall in 1875, both preceding the opening at Oxford in 1879 of Lady Margaret Hall and Somerville Hall. While both universities still withhold the degrees from women, Cambridge admitted them to degree examinations in honors in 1881-82, while it took Oxford from 1884-1890 to admit to all final honors schools.

This slow but sure approach to coeducation may not only illustrate the characteristics of the two universities, but may indicate a safe method of procedure for the solution of the same problem by the older American foundations.

In the language of the economist one of the greatest of the modern questions for universities is the distribution of their products. "Oxford and Cambridge have already their labor bureaus, but they dignify them by the name of 'appointments boards.'"⁵ This field was first entered by Cambridge in 1884 by the establishment of the scholastic agency to provide Cambridge men in search of scholastic appointments with a convenient and inexpensive means of obtaining

¹ The Times literary supplement, Jan. 15, 1914.

² Cf. Ch. XVI, "Examinations," p. 228; "Schools Examinations," pp. 224-225.

³ Cf. Ch. XIX, "University Extension Teaching," p. 249.

⁴ Cf. Ch. VIII, "Women's Colleges," pp. 151-152.

⁵ Brereton, Cloudesley, "Cooperation between School and Employer," Contemporary Rev., Feb., 1914.

them. It has also opened its register to other applicants without restriction of degree or place of education. Since its commencement it has received upon its books over 5,500 candidates. The business is conducted by a director and secretary under the control of a committee of university officials and members of the staffs of the principal colleges. With the object of promoting a scheme of life assurance for schoolmasters and clergymen, the agency in 1891 registered as a company under the Company's Act. The Cambridge University appointments board in 1902 took over the work of the appointments association and is administered by a secretary and an assistant secretary. Past and present members of the university are eligible for registration. No candidate is accepted without a nomination either from a member of the board or from a tutor of his college, and personal interviews with the secretary are deemed essential. Without excluding scholastic appointments, the board has mainly in view appointments in the military, diplomatic, and civil services at home, in India, and in the colonies; in the professions of law, medicine, engineering, journalism, and literature; and in businesses, agricultural, commercial, and industrial. A noteworthy feature anticipating vocational training is a series of special articles on various employments which may help the reader to realize something of the extent of ground which the board tries to cover, published in its annual *Appointments Gazette*.

The appointments board's report for 1912 shows rapid and steady progress. The number of appointments obtained by graduates on the introduction of the board was 315, as compared with 146 in 1907. The board already finds places for more than a quarter of the men who leave Cambridge annually.

At Oxford it was not until 1907 that the university officially recognized the appointments committee, which was founded in 1892. One of its most suggestive features for Americans is its consultative committee, consisting not only of representatives of all the colleges and of the noncollegiate delegacy, but also of co-opted members, nonresident representatives of some of the larger business interests. The committee states that there is an increasing number of men who are anxious to take work outside the learned professions, and who appear to be qualified for such work, either by the possession of general ability or by interest in subjects closely connected with business and administration. Several business men of eminence and public spirit are serving on the committee. The importance attached to the committee and a point to be marked by the corresponding American bureau is the selection of an experienced secretary. He is a mature graduate of one of the strongest colleges, with school and business experience, and for years private secretary of one of the most distinguished lords and cabinet ministers. From October to

May, inclusive, 1912-13, the committee registered 671 candidates. The secretary received above 800 visitors, of whom 330 were candidates to whom special interviews were given. The appointments filled in 1912 were 179, of which 45 were in the civil service at home and abroad. The committee receives grants from the university and the colleges and charges only a nominal fee for registration and a small commission on appointments secured.¹

Especially should the attention of the Federal and State Governments and the universities and colleges be called to the intimate relations between the universities and the public services, to which entire chapters are given in the Handbooks of both universities. The royal commission on the civil service (1913) gave particular heed to the testimony of the representatives of the universities, with the design of correlating the civil-service examinations and the studies and examinations of the universities still more closely. For the higher civil services open competition, the civil-service commissioners and the universities cooperate in a scheme of subjects and marks. Both universities make provision for instruction in the subjects accepted by the civil-service commissioners not only in the arrangement of their tripos or honor school courses but in special lectures. The board of Indian civil-service studies at Cambridge makes provision for those selected candidates for the Indian civil service who pass their probationary year at Cambridge. The syllabus of the civil-service commissioners still applies the principles enunciated by Lord Macaulay's committee in 1854, viz, "that the object of the competition should be to secure for the Indian civil-service officers who 'have received the best, the most liberal, the most finished education that their native country affords.'"

Adding a list of public departments, not under the heading of the "higher civil service," which by some form of nomination or selection send students to the universities at least for some part of their training, an American is made to realize the service of the universities to the Empire.² If his universities are not to be provincial, and if the United States is to play its part among the world powers, the

¹ Of registration, 50 cts. On appointments (a) for two months or less, 3 per cent on salary received; (b) for more than two months but less than a year, 1½ per cent on the whole salary; (c) for more than a year, 1¼ per cent on the first year's salary; (d) for all appointments up to \$2,000 per annum in Government service abroad, a special fee of \$15.75.

² The higher and other civil service include departments like the home and Indian civil services and the following suggestive list: Eastern cadetship in the colonial service clerkships in the Houses of Parliament; foreign office and diplomatic service; student interpreterships for the Levant, Persia, Greece, Morocco, China, Japan, and Siam; consular service; colonial service in Africa, Egyptian and Soudanese civil services; Indian appointments in forestry, education, police, State railways, and customs; colonial police for Ceylon, Hong Kong, Straits Settlements, Malay Straits, British Guiana, Trinidad, and Jamaica; the permanent service of Sarawak; British North Borneo Co.; the board of education; the British and other museums; the Geological Survey; Ireland ecclesiastical commission and inland revenue, etc.

National and State Governments and the universities and colleges must come into a closer cooperation in the training of public servants.

At Oxford the information was vouchsafed that at the present moment not less than 100 of the graduates under 30 years of age had gone directly from the university to administrative positions in the Crown colonies, and that the Government testified to their success in managing men.

No wonder Corbin wrote, "The colleges of England have manned the British Empire." With this in view, it is easier to appreciate Cecil Rhodes's suggestions for the selection of scholars, whereby scholarship was to weigh only one-fourth in the marks, the other three-fourths being distributed among the possession of certain virtues, the power of leadership, and athletics, the latter as much a test of the spirit of fair play as of physical fitness. He distilled in his suggestions the essence of Oxford and Cambridge, with which he had been infused, and he proposed to diffuse it throughout the academic life of Anglo-Saxondom, in which he included Germany, to prepare for the leadership of the world.¹

Prolonged study of the older universities has been made necessary not only by what they are in themselves and what they have to teach, but also because they are the fountainhead of much of the university life yet to be taken up. Further, light has been gained upon a disputed question as to whether the universities are and ought to be stationary, as their enemies would put it, reactionary, devoted to a certain form of culture, or progressive, participating in modern movements.

The record justifies the strong commendatory phrases the severe critics have been constrained to make on the universities. Lord Curzon says:

A greater injustice could not be done to modern Oxford than to represent it as the home of stationary forces or ideas * * *. Oxford is as capable now as ever—nay, more so—of fulfilling its traditional part as the focus of the best educational activities, the highest civic aspirations, and the most advanced thought of the age and the race.²

Mr. Tillyard writes:

It is not that Cambridge has gone back to the slumbers of the eighteenth century. On the contrary, it has made persistent and courageous efforts to adapt itself to modern conditions. The last 50 years, and especially the last 25 years, show a great increase in the number of subjects taught and of people to teach them.³

He emphasizes that men can be trained practically as physicians and surgeons, as engineers, as farmers, as teachers, and for the army,

¹ Cf. p. 20.

² Curzon, Lord, "Principles and Methods of University Reform," *supra*, p. 13.

³ Tillyard, A. I., "A History of University Reform," Cambridge, 1913, p. 352. Cf. Ch. XVII, "Curricula," p. 235.

and for the civil service at home and abroad, and that opportunity is given for research students. He dwells upon the increase since 1870 of the combined teaching staff of the university and colleges to about 380, or about 1 teacher for every 10 undergraduates. He points out the multiplication of buildings and the expenditures upon them since 1882. He summarizes by saying, "Cambridge strives to teach all that a complicated modern society can demand to know."

In conclusion, the ancient universities have been found to be not static but dynamic. They reveal that it is the nature of a university not only to preserve but to focus the truth of all the ages on the problems of the present.

DURHAM.

Several Englishmen have been surprised that Durham should be grouped with Oxford and Cambridge, rather than with the newer English universities, since it was founded in 1832. In fact, in its Durham division it is an inchoate Oxford or Cambridge, the third of the ancient universities in England, brought forth after an interval of 700 years as one born out of due time. In its Newcastle division it is an inchoate newer university, anticipating all the other new universities. Probably it has the most to teach America in its pioneering in modern federalism resulting in integral coordination of colleges in separate places.¹

In its origin it is of the ancient type. There was a combination of religious and scholarly traditions, with a quasi national feeling. Durham, like Oxford, connects us with Anglo-Saxon times. The latter had its nucleus in the nunnery of St. Frideswide of the eighth century, the site of the present cathedral, the chapel of Christ Church. The former is within the precincts of, and uses as its chapel, the cathedral with its shrines of St. Cuthbert and the Venerable Bede. The founding of University College, the senior college at Oxford, in the thirteenth century, one of the centers of the "northern nation," by William of Durham, is an early intimation that the "north countree" would one day have universities of its own.

By 1640 Manchester and York were seeking to be the seat of a new university, but Cromwell, with his eye upon the endowments of the cathedral, decided upon Durham. After the Restoration the matter rested until the political agitation which culminated in the reform bill of 1832, uniting with the example of the wealthy bishops of the earlier centuries, persuaded the astute Bishop of Durham, Van Mildert, to devote \$15,000 a year of the cathedral's princely revenues to the founding of the university. Like the older universities from the times of Queen Elizabeth and Archbishop Laud, it was to be the

¹ Cf. Ch. XIII, "Coordination of Institutions," pp. 195-197.

assured handmaid of the Church of England. The charter of 1837 constituted a corporation by the name of "The Warden, Masters, and Scholars of the University of Durham," the admission to membership of the university to be in accordance with regulations established by the dean and chapter of Durham, with the consent of the lord bishop. From that day to this the University at Durham, as befits its location so well alluded to in its coat of arms, *Fundamenta ejus super montibus sanctus*, has been a Zion of the Anglican church, especially resorted to by theological students. Though religious tests have been abolished except for theological degrees, the Bishop of Durham has been retained as visitor and the dean and members of the cathedral chapter as members of the senate, and the professorships of divinity and Greek continue annexed to the canonries. Ecclesiasticism has not prevented a broad administration by which the university antedates the newer universities in the recognition of applied science by the affiliation of the colleges at Newcastle, and marks its departure from its Oxford and Cambridge pattern by its admission of women to degrees, excepting theological, in 1895. It made the signal event of the year 1914 the giving of the vote to women in convocation.¹ In kinship with the Oxford and Cambridge collegiate system, University College was founded with the university where it is still housed in the castle with the baronial hall of the Palatine Prince-Bishops. The collegiate system, however, in the nineteenth century appears to be a survival. It did not develop at Durham except in an adaptation which preserves the social and residential element in the halls and hostels. The latter have multiplied, but have shown no tendency to develop into colleges.²

Clearly the literal reproduction of the Oxford and Cambridge College plan is not fitted, save in its essence, to modern times. The air of antiquity and the picturesqueness which Sir Walter Scott celebrates in his lines to the "grey towers of Durham" unite it from its heights on the Weir to its sisters on the Cam and the Isis. Again we are reminded of the advantage of a river for university scenery and events. The traditions of English oarsmanship have been kept alive since the first regatta at Durham on the Weir in 1834.

A visitor at Durham is impressed by the absence of laboratories, and herein is a likeness to Oxford and Cambridge in the first half of the nineteenth century, when Durham was founded. The B. A. degree is preserved in its pristine purity as representing Greek, Latin, mathematics, and religious knowledge, and it is still possible to take

¹ Cf. Ch. VIII, "Women's Colleges," p. 148.

² Bp. Hatfield's Hall, opened in 1846 for students in any faculty; Bp. Cosin's Hall, opened 1851, closed 1864; S. Chad's Hall, opened 1904 primarily for candidates for holy orders; likewise S. John's Hall in 1909; a women's hostel in 1899. Noncollegiate or unattached students under a censor in approved lodgings first admitted in 1871.

the degree in two years. With the incoming of modern subjects and the alliance with Armstrong College to keep the original B. A. with compulsory Latin and Greek the Durham division gives a degree of B. A. *in litteris antiquis*. Warrant from the above may well be found for the recognition in the United States of the small classical college, if it will bravely delimit its range of studies.

One of the most interesting things is the blending of the ancient and modern in education and the extension of the principle of the federation of colleges in one city to those in another city. After a half century of experiments in various forms of affiliation, what appears to be a final solution of the problem was accomplished by the statutes approved by King Edward VII in council in 1909 under the University of Durham parliamentary act of 1908. These statutes created two divisions of the university to be called respectively "the Durham division" and "the Newcastle division." The Durham division comprises the colleges in Durham, and the Newcastle division comprises the college of medicine and Armstrong College. Thus all the colleges became integral parts of the tripartite university, each retaining its local faculties, governing boards, and property, and all under the one chancellor, vice chancellor and other university officers, and represented in and subject to the university's senate as the supreme governing and executive body of the university.¹ Thus disconcerting rivalries have been done away with, and Durham University has become the crown of the educational system of Newcastle, the county of Durham, and its adjacent area. One burgeoning university seems assured in place of two, which 10 years ago it was feared would be erected—one of them representing classical and the other an industrial extreme—one in Durham, the capital of the county with only 15,000 inhabitants, the old ecclesiastical, political, and historic center, and the other in Newcastle-upon-Tyne, only a dozen miles away, with its growing population of 270,000, a center of coal fields, of iron and shipbuilding industries. The evolution of three institutions into one university is instructive. It grew from the loosest affiliation.²

The University of Durham College of Medicine continues as a corporation under the Company's Act, and with articles of association registered by the board of trade. It is controlled by a court of governors and an executive council. The constitution of the council of 21 members supplements the statutes of the university in interweaving all the institutions concerned, without sacrificing local autonomy. Seven of the council are elected by the court of governors, seven by the members of the academic board, i. e., the faculty, three

¹ Cf. Ch. IX, "Organisation and Administration of Universities," p. 159.

² Cf. Ch. XIII, "Coordination of Institutions," p. 195.

by the senate of the university, two by the house committee of the Royal Victoria Infirmary, and two by the council of Armstrong College. There is afforded herein an early and happy illustration of the fact that a medical school can not well be isolated from a university.

Equally instructive is the story of the relations of Armstrong College with the university. The faculty of science in the university is still seated entirely in Armstrong College, in which alone are held the classes and examinations requisite for the degree of B. Sc. Early in its career the college recognized the importance of the literary side of university education, in virtue of which the university admitted its students to the degrees in letters, though not at that time to the degrees in arts. Through the benefactions of a number of local donors and of the municipality, the college met the standard of the board of education for a university college. In 1904 it opened a new wing of its extensive and fine college buildings, and in honor of one of its patrons, the late Lord Armstrong, took his name. In 1909 it became an integral part of the university, with full representation on the new senate and with admission to university degrees in arts as well as in letters and science. It now has the five faculties of pure science, of applied science, of arts, of letters, and of commerce just instituted. Applied science includes civil, mechanical, and electrical engineering, mining, metallurgy, naval architecture, and agricultural science. Like the independent university colleges,¹ it also has departments like agriculture and evening classes below university grades, and it recognizes the shorter courses with diplomas. By these courses the college closely interlocks itself with the demands of a great industrial center and enforces its appeal for immediate public support. Principal Hadow recognizes to the full that each modern university has to serve as the educating center of the district in which it is situated. Yet he contends that the modern universities are not in any bad sense utilitarian. He says:²

There are at the present day in England some persons who call themselves utilitarians—mainly, I think, because they misconceive the meaning of usefulness—and who take what they regard as a utilitarian view of education. According to them its whole object is to provide a man with such information and method as may be needed to equip him for his career in after life; so many facts in return for so many fees. •

A university in its lower and most practical range is not a trade school. Principal Hadow believes that the university inculcates the virtues of discipline, of self-restraint, of a single-hearted devotion to truth; they rest upon a nobler ground than the fact that they benefit their possessor. He adds:

¹ Cf. Ch. V, "Independent University Colleges," p. 130, *passim*.

² Hadow, Principal W. H., address, "The Old and New Universities," official report of church congress, Middlesbrough, 1912, George Allen & Co., London, pp. 243-245

The university investigates principles rather than practice, but it bases its principles on an exhaustive survey of the facts, and it so formulates them that they can illuminate practice at every point of application. *Quod in sciendo verissimum id in operando utilissimum*: Let a man desire to know because knowledge is good, and he will soon learn to work because work is serviceable.

The remarkable thing in Armstrong College and its sister colleges in the newer universities so often called utilitarian, is the reinforcement of the sentiments of Principal Hadow by the fact of the increase of the liberal arts faculties and students in the midst of institutions largely founded and supported in the interests of applied science. The principal's annual reports from 1910 on referred to the development of the faculty of arts in Armstrong College, as a result of the admission of its students to the degree in arts at the University of Durham. Even the corporation of Newcastle made an additional grant of \$45,000 per annum for five years to this faculty. The spirit of the older universities has descended upon the newer in Durham. The professional and practical impulses of the newer in the Newcastle branches have revived the older in Durham.

The most original contribution Durham has to make to our subject is its well wrought out scheme of a genuine federation in a central university of really autonomous colleges of different types in separate localities.¹ A district with a population of 2,400,000² will rally to the support of a many-sided united institution in place of fragmentary and competing ones.

Our position is confirmed by opinions gathered from interviews in various quarters as well as by published statements like the following:

There are those who from time to time urge that the Armstrong College would make a yet stronger appeal to local patriotism if it broke away and established itself as the University of Newcastle. That, however, is but the echo of a controversy now happily buried. Whatever may have been the experience elsewhere, the federal tie at Newcastle and Durham has operated to the mutual advantage of all the partners. The Armstrong College retains a sufficient measure of independence to stir the civic pride of every good citizen.

¹ Cf. Ch. XIII, "Coordination of Institutions," pp. 195-197.

² The Counties of Durham, Northumberland, Cumberland, and Westmoreland.

Chapter II.

SCOTCH UNIVERSITIES.

St. Andrews, Glasgow, Aberdeen, Edinburgh.

The Scotch universities¹ are as unique in their way as are Oxford and Cambridge, from which they are distinctly different. Lord Rosebery presents a scholar's as well as a Scotsman's view when he says:

Our systems of religion, of law, and of education are all essentially and outwardly different from those which prevail in England. The church and the law we kept strenuously and purposely; the universities remained not by special effort, but because of their fitness for the work. The universities will continue, not merely because of their present powers and usefulness, but because of their constant readiness to adapt themselves to the shifting conditions of human requirement and intellectual effort.²

Lord Bryce elaborates the same thought and brings it to bear upon American, especially State, universities:

The four universities of Scotland are very different from the English and rather resemble the universities of Germany. Though far less completely equipped than are the latter, for Scotland has been a comparatively poor country, they have always given a high quality of instruction and produced a large number of remarkable men. There are no residential colleges like those of England, so the undergraduates live in lodgings where they please, and thus there is less of social student life. But the instruction is stimulating; and the undergraduates, being mostly poor men and coming of a diligent and aspiring stock, are more generally studious and hard working and self-reliant than those of Oxford and Cambridge. Within the last 20 years women have been admitted to the classes, and that which was deemed an experiment is pronounced a success. Last I come to your own [American State] universities. Whereas the universities of Germany have been popular, but not free, and those of England free, but not popular, yours, like those of Scotland, are both popular and free. Their doors are open to every one, and every one enters.³

From the beginning the Scotch universities have been preeminently national and in recent times increasingly State institutions. The charter of the oldest Scotch university, St. Andrews, given by Pope Benedict XIII, states expressly that the university was founded after

¹ See Tables 2 and 3.

² Rosebery, Lord, rectorial address University of Edinburgh, 1882. (David Douglas.) p. 22.

³ "University and Historical Addresses," *supra*, p. 160.

full discussion and by the advice and with the consent of the three estates of Scotland:

The Scottish universities are not private corporations—they are national seats of learning, existing for the nation, and controlled by the Parliament of the nation. And the universities have no wish to become independent of the State or to be removed from the control of the State.¹

The second oldest university, Glasgow, was established by Pope Nicholas V by a bull dated January 7, 1450–51, at the instigation of King James II, as well as of Bishop Turnbull, and was modeled after Bologna, one of the oldest and most democratic of universities. The next two universities at Aberdeen, although also at an ecclesiastical center, start with a distinctly national impress. At the instance of King James IV, Elphinstone, Bishop of Aberdeen, obtained in 1494–95 the authority of a papal bull to found the university. Within the university the college of St. Mary was called King's College because of royal patronage and is styled in acts of Scots Parliament, "Our Sovereine Lord, His College and University." The other Aberdeen foundation, Marischal College, was emphatically Scottish, established in 1593 by the Earl Marischal, George Keith, under a charter ratified by act of the Scots Parliament.

The youngest of the universities, Edinburgh, placed at the royal capital, in contrast to the oldest, St. Andrews, at the ecclesiastical capital, was established as the "Town's College" in 1583 by the town council of Edinburgh, under powers granted by King James VI. Gradually in acts of the general assembly, of the town council, and of Parliament, "The College of James VI," which from the beginning possessed the privilege of conferring degrees, came to be styled the "University of Edinburgh." Remaining under the patronage and control of the town council down to 1858, it was not only intensely national but also the forerunner of the great municipal universities in England.²

These institutions considered from the beginning as national corporations, unlike the view taken of Oxford and Cambridge as private trusts, became after the Reformation with the plans for a national system of education practically State universities. From that day to this there has been a constant support and supervision of the universities, first by the church and then by the state.³ The first book of discipline (1560) of the Kirk undertakes to make certain arrangements for the three universities. Fundamental changes have been made repeatedly. "A Nova Erectio," or new charter, was given to the University of Glasgow in 1577, largely through the influence of

¹ Donaldson, Sir James, "Addresses Delivered in the University of St. Andrews, 1886–1910," T. and A. Constable, 1911, p. 47.

² Cf. Ch. IV, "The New or Provincial Universities," p. 102.

³ Cf. Ch. XII, "State Aid and Visitation," p. 190.

Principal Melville, who brought from the University of Paris the revolt against the supremacy of Aristotle. Under the same influence in 1583 at Aberdeen there was a "Nova Fundatio" prepared by a commission appointed partly by the King and partly by the assembly.¹

The early Scotch belief that it is the duty of the State to maintain a national system of education by taxation—a system including primary, secondary, and university education—has resulted in frequent legislation by Parliaments on the universities. The Scottish universities acts of 1858 and 1889 have effected little less than a revolution in the constitution,² standards, curricula, State aid, and coordination of the universities. They constitute the four universities "The academic quadrilateral," as the crowning citadel in Scotland's educational system. Since 1901 this citadel has been strengthened by private gift as well as by the doubling of the public grant. In that year the great Scotch-American created the "Carnegie Trust" for the universities of Scotland by the donation of \$10,000,000. The hospitality and heart of the giver followed his treasure in the annual invitation to Skibo Castle of the four principals of the universities for conference with each other, and other distinguished Scotsmen interested in the universities. On one of these occasions Lord Haldane (at that time Mr. Haldane, and not a member of the Government) urged an appeal to the Government for a large sum to meet the needs of the universities.³ The result was, in addition to the sums of \$150,000 a year under the education and local taxation account (Scotland) act 1892, and \$210,000 annually under the universities (Scotland) act, 1889, the grant of \$200,000 a year to Scottish universities and, still more important, the provision of a way of adding to the grants in the education (Scotland) act of 1908.⁴

The age-long State supervision and State aid are manifestations of the fundamentally national character of the Scotch universities. In early days as isolated people, in a picturesque but infertile land tending to breed poverty and necessitating thrift, with little distinction of classes, with the cherishing of a sense of equality and individuality by clan and by church, there was generated what came to be known later—particularly in New England and the West—as a "passion for education." The New England mother's charge to her son would have fitted the Scotch mother equally well, "Child, if God make thee a Christian and a scholar, thou hast all I ever asked for thee."

In the absence of modern opportunities and the temptations of wealth, education opened the most eligible pathway for a career.

¹ Rait, Robert Sangster, "The Universities of Aberdeen," Bissett, 1895, pp. 106-110.

² Cf. Chs. IX, "Organisation and Administration of Universities," p. 159; XIII, "Coordination of Institutions."

³ Donaldson, Sir James, addresses, *supra*.

⁴ Cf. Ch. XII, "State Aid and Visitation," p. 190.

Education from the lowest to the highest was a necessity before the age of coal and steel for Scotland's greatest export—educated brains. The Scotch could not, like the nation of landlords and shopkeepers south of them, dream that because of their prosperity in agriculture, manufactures, and commerce a national system was little worth while. So Scotch sentiment and practice were the constant source of their educational legislation, and anticipated by centuries the Prussian scheme of 1817 of the organization of State education, crowned by universities and the present movement of their English brethren in the same direction.

The notion in the outline for an American State system of education embodied in the Ordinance of 1787 for the government of the Northwest Territory may be traced to the same Scotch source, coming from the pen of an American Presbyterian minister with a Scotch name.

Vigorous as has been the development of the American State university, it may yet profit by paying attention to the Scotch example. The teacher in the school preparing for the university must be a university man imbued with the spirit of the old-time parochial teacher, so lovingly depicted by "Ian MacLaren" in "Domsie," ever alert to discover the "laddie o' pairts who must awa' to the university."

Until after the first quarter of the nineteenth century these teachers were sent out from the universities. With the incoming of instruction in newer subjects like geography, training colleges, the first of which in Britain was the Glasgow Normal Seminary, opened in 1827, began to supplant the universities in the preparation of these teachers. The universities are recovering their primal function of training teachers and regaining their leavening influence in the schools by cooperation with the provincial committees for the training of teachers. Professional training may be conjoined with the university course in a way similar to that which has obtained in the case of normal school and local committee schools or it may be taken as a postgraduate course.¹ Full warrant is thus given for the establishment of schools or colleges of education as in American universities.

Thus happily have the Scotch coordinated the training schools or colleges with the universities and set an example for the solution of what has been made a difficult problem in the United States in relating the normal schools to the colleges and universities. The linking up of the Scotch educational system is further seen in the making

¹ Cf. "Glasgow Provincial Committee for the Training of Teachers, report, April, 1913," pp. 5, 7, 8, "The number of education students with a university training is a fairly constant quantity at the Glasgow Center, being about 500 in each year." Cf. Ch XIV, "Applied Science and Professional Education," pp. 210-212.

of the universities the coordinating centers, conjointly with the separate agricultural colleges, in defined areas for lower and higher agricultural education,¹ and in the recent agreements for cooperation with the great technical schools. The unification of the universities with the preservation of their individual autonomy, secured by the parliamentary act of 1889, and the impulse given to modern subjects further developed by the conferences and joint boards of the universities themselves has been stimulated by the Carnegie Trust. The Trust, with its \$500,000 a year to distribute, has become an influence second only to the Government. We are confronted with a recent phenomenon of great interest in the history of education on both sides of the Atlantic—the administration of vast educational funds and the influence upon institutions by extraneous perpetual corporations. Without entering into the merits of the discussion, we can not therefore pass by the bare facts of the Carnegie Trust and some of the criticisms of it. In 1901 Mr. Carnegie conveyed to trustees \$10,000,000 in bonds of the United States Steel Corporation, bearing interest at 5 per cent. He directed that one-half of the net income should be applied toward the improvement and expansion of the universities of Scotland in the faculties of science and medicine, also for improving and extending the opportunities of scientific study and research, and for increasing the facilities for acquiring knowledge of history, economics, English literature, modern languages, and technical or commercial education. The other half of the income was to be devoted to assisting students of Scottish birth or extraction in the payment of university class fees. Of the 22 trustees, 4 are elected by the universities, each university choosing its representative for a period of four years. Of the executive committee of 9 members, 2 are of the 4 trustees elected by the universities, alternating every two years. This direct representation of the universities is reinforced by the fact that other members of the Trust are often from the governing bodies of the institutions. Four *ex officio* members relate the trust more widely, His Majesty's Secretary for Scotland and the provosts of Edinburgh, Glasgow, and Dunfermline.

The Trust instituted a quinquennial scheme of distribution of grants to the four university centers. The total grants for the 11 academic years from October 1, 1902, till September 30, 1913, amounted to \$2,270,000, of which there were allocated to libraries \$217,500, to buildings and permanent equipment \$1,016,775, and to teaching \$1,036,220. In the four universities in this period 3 chairs and 25 lectureships have been partially or completely endowed.² The

¹ Cf. Ch. VII, "Agricultural Colleges and Schools," p. 142.

² "The Carnegie Trust for the Universities of Scotland, Twelfth Ann. Rept." (1912-13); Edinburgh University Press, 1914, pp. 7, 8.

policy of the Trust in making additions to the capital endowments of the universities rather than relief to income has been justified. To the institutions has been left the sole responsibility in the matter of their annual ways and means. In the new and additional buildings, lectureships, and chairs the Trust without intermeddling with internal administration has added to the permanent equipment and enrichment of the institutions. The Trust is of the opinion that it must not be bound to anything of the nature of a fixed proportion to the respective university centers. "The Trust must always be in a position to determine its action from the point of view of Scotland and Scottish university education as a whole."¹

The second great work of the Trust appears in its research scheme intended to reach all classes of workers from students who have just graduated to graduates who have already entered on professional careers. Provision is made for scholarships of the annual value of \$500, fellowships of \$750, and grants in aid of research. Selection is not made by competitive examination but on the evidence of experts regarding the applicants' special fitness. In the case of applications for grants from members of the staffs of the institutions the Trust, which had been making the grants without consultation with the governing bodies of the institutions concerned, now requires that the application should be made through the governing bodies and with their advice. The scholarships and fellowships are limited to subjects in science, and medicine, in history, economics, and modern languages and literature. With all the above operations of the Trust there has been general satisfaction. The testimony is that there has been stimulated a spirit of research such as did not previously exist in Scotland. In the wider field also of the British universities the spirit of research is being propagated, inasmuch as the Scotch Carnegie fellows and scholars have been permitted to work in other British universities, including Montreal. The total of the grants for this postgraduate and research scheme for the 10 years to 1913 was \$3,152,260. Contributions to knowledge have resulted in nearly every branch of experimental science.

The report of the Trust alleges that "many of the English and some of the colonial universities now rival those of the Continent in the provision which they make for research especially in the subjects of radioactivity and molecular physics and in the repute of their teachers."² The success and economy of the Trust in the promotion of graduate study and of research by leaving the work in the university and extending their libraries, laboratories, and publications, rather than by setting up a separate institution for investigation and re-

¹ "The Carnegie Trust for the Universities of Scotland, Twelfth Ann. Rept." (1912-13); Edinburgh University Press, 1914, p. 10.

² *Ibid.*, p. 17. Cf. Ch. XV, "Advanced Study and Research without Graduate Schools," p. 216.

search, make against the establishment of independent institutions for the purpose.

The happy and far-reaching effects of the two lines of operation of the Trust in the "endowment of postgraduate study and research" and "grants for universities and extramural colleges" have been acknowledged by the critics who attack the Trust's third line of operations in "assistance in the payment of class fees." The regulations require that the applicants must be of Scottish birth or extraction and should hold ordinarily the leaving certificate of the Scotch Education Department bearing evidence of such preliminary education as is required by the universities for their respective graduating curricula. The applicants must have had their courses of study for each academic year approved by the university adviser of studies. They are not eligible for assistance in the payment of fees of classes belonging to a further stage of their curriculum until they have passed the graduation examinations belonging to a previous stage. The annual allowances toward payment of class fees are for the ordinary degree in arts \$45 a year for three years, or for honors \$45 a year for four years; in science, \$60 a year for three years; in medicine, \$75 a year for five years; in law, divinity, and music, \$30 a year for three years.

In the period from the institution of the Trust in 1901 to September 30, 1913, the Trust paid \$2,670,045 to 13,382 beneficiaries, of whom 4,000 were women. In the same period 117 beneficiaries have voluntarily refunded advances for class fees to the amount of \$14,065.

Mr. Carnegie, when making the gift in 1901, wrote:

My desire throughout has been that no capable student should be debarred from attending the university on account of the payment of fees. * * * I hope that the honest pride for which my countrymen are distinguished will prevent claims from those who do not require assistance, and that the invidious task of inquiring into the circumstances of each candidate need not be imposed upon the trustees. * * * The donor, believing that some students in after life may value the privilege of repaying advances received from the trustees, although these are free gifts, hopes the trustees will gladly welcome repayments from such students as prefer to consider the payments made on their account merely as advances, and that this will protect and foster the spirit of manly independence so dear to the Scot.

In the face of this, "Mr. Carnegie has been much blamed for lowering the independence of the Scottish people," says one of the ablest critics of the methods of the Trust in the payment of fees. He adds "whatever blame there be must rest with the Trust."¹

The aim of the criticisms is to preserve the universities from what may tend to be undue influence upon them of the Trust and to have put into their hands the distribution of the funds in aid of students.

¹ "Memoranda by Principal Sir James Donaldson on the Carnegie Trust and Its Administration." St Andrews, 1913, p. 8, *passim*.

The arguments used are that the annual income of over \$125,000 in bursaries independent of the trust made it unnecessary to institute the payment of fees of students in arts, science, and theology. It is admitted that these bursaries are thrown open to public competition and often obtained by rich students, otherwise it is estimated they would be sufficient to care for every poor student in Scotland.

The increase of 25 per cent in the attendance of students since the inauguration of the Trust is attributed largely to the increase in the attendance of women, partly induced by the payment of the fees. The students are subject to no investigations of their pecuniary needs or the receipt of a bursary and are dealt with independent of their parents, so it is believed that rich and poor students accept the payment of fees as a gift to add to their pleasures and comfort. In the case of professional students, in engineering, medicine, and law, it is urged that the policy of the Trust tempts men into a career where they have to face poverty, and that discrimination should be made in favor of the poor young man of rare capacity by grants for both maintenance and payment of fees. The remedy proposed for these evils is the management of this portion of the trust funds by the universities with the facilities they have at first hand to treat each individual case. In the background of these arguments appear certain general regulations of the Trust which it is deemed impinge at least indirectly upon the freedom of the universities. Various actions are cited, such as the resolution "that there should be equality of class fees among the Scottish universities in regard at least to the degree-qualifying classes."

The stress put by the Trust upon the leaving certificate of the Scotch Education Department, rather than upon the preliminary examinations of the universities, resulting in 87 per cent of the new beneficiaries for the winter session 1912-13 entering by a full leaving certificate, threatens seemingly the system of admission to the universities.¹ The universities feel the strictness of the provisions of the Trust that their beneficiaries must pass examinations required for the degree proper to their curricula precedent to the further payment of class fees, and that beneficiaries must proceed to a degree. The effects of these regulations seem too stringent, and were indeed far-reaching, to a community accustomed to the matriculation of students who had not passed the admission examination and who were permitted to go on with their university studies without passing class examinations or being candidates for a degree. The Trust also, before renewing its annual payment of fees for its beneficiaries, follows them up by means of reports and thus has brought it about that

¹ Cf. Ch. XVI, "Examinations," pp. 226-227.

the universities have appointed student advisers, who not only make reports but are also supposed to guide the student in the choice and order of the subjects of his curriculum.

The choice of studies was further effected by the adoption of the inclusive in place of the class fee. The Trust began to agitate in 1907 for this change. The State treasury sought in 1911 to make it a condition for receiving its grant to the universities. The Trust contended the class fee tempted the teacher as well as the student to put financial considerations above educational ones in the arrangement and choice of classes. In addition the Trust, to prevent one university from underselling another, resolved "that there should be equality of class fees among the Scottish universities in regard, at least, to the degree-qualifying classes."¹ In view of the above facts, a vigorous objector exclaims, "The Scottish Education Department, in alliance with the Trust, has succeeded in driving a broad highway through the universities, a way over which Parliament, courts, councils, and senatuses have neither veto nor control."²

It is evident that the Trust has become incidentally and almost necessarily a standardizing agency in the universities and certain central institutions whose work is recognized as of "university level," and even indirectly in the secondary schools.³ Sir William McCormick testifies that over 20 years ago, when the parliamentary commissioners set up a preliminary education standard for the Scottish universities, there was no entrance standard, but it has been the compelling force that has raised secondary education. The raising of the standard has eliminated what was practically a secondary school department in the university. He ventures to compare the Scotch university now in this respect as follows:

In Germany they do their secondary education all in school. In America they have a different arrangement because they have what they call a college, which is a buffer between the secondary school and the university, and it is hard to say what it represents on our standards, but I should say that on the whole it is half-and-half.

Thus the Trust illustrates anew that influence may be as great a power as authority. In any case the power of the purse is felt. The

¹ Under protest the universities adopted the inclusive fee except in the faculties of medicine and applied science, where, inter alia, the great expense of instruction in certain necessary subjects, arrangements with extramural institutions, and the number of non-Scottish students led to complications. In 1914 the University of Edinburgh had not yet arranged with the treasury an inclusive fee in medicine and applied science.

² The Aberdeen Univ. Rev., Nov., 1913, p. 63. Cf. pp. 73, 74, 75. Oxford Mag., May 15, 22, 1913. University of Glasgow General Council Reports, Apr. 24, 1912, pp. 15-23; Apr. 30, 1913, pp. 21-24, 39-41.

³ Royal commission on the civil service, minutes of evidence, 1913, Sir William S. McCormick, secretary of the trust, pp. 10-21. He states the whole case of the trust, pp. 15-24, 100-111.

Trust professes to push forward ideals advanced by the commissioners under the act of 1889 and to be cooperant with the Scottish Education Department and the Treasury. It is not surprising that there is some concern in some quarters for the autonomy of the universities.

The Treasury in not enforcing the demand for the inclusive fee in applied science and medicine; and the Trust, relying more and more upon student advisers and the recommendation of the staffs in research appointments, shows respect for that autonomy. The thought is brought home that for coordination and standardizing purposes an influence outside university faculties may be desirable, and that there may be advantages in securing the cooperation of the State and organized private benevolence with the universities. A threefold cord is not soon broken, but in this case care must be had that the educational strand is strengthened and not weakened by the financial one.

The Scotch universities, intertwined with the imperial treasury, with the Scottish education department and national school system, with the Trust, and touched by a cosmopolitanism due to an international attendance in medicine and applied science, and the scattering of their alumni through all lands, may well be declared by Maurice Hewlett "fiercely modern." Paradoxically he maintains that they have a "medieval character, while Oxford and Cambridge have completely lost it."¹

They are medieval in that colleges never choked the strong central government of the universities, the dominance of the professoriate was never lost, the professorial class lecture was not supplanted by the collegiate tutorial instruction, and the sacred seven subjects of the trivium and quadrivium have retained their prominence almost till to-day. Although since the royal commission (1889) not less than 22 chairs and 146 lectureships in scientific and modern subjects have been added, there is no full chair in the modern languages, and the political, economic, and social sciences are largely represented only by lectureships. As the assistant professoriate in America has agitated for the faculty franchise and proportionate salaries, so are the lecturers in Scotland inclined to do, and from some such sources the Scotch universities have been called "reactionary." The survival of the best of medievalism in respect for antiquity and the continuity of a sturdy authority, imbued with a democratic spirit which embraces in the membership of the university, and with representation in the Government, the graduates and the students, and all in close alliance with the State and nation, certainly enriches the modernity which has also been noted in the Scotch universities.

¹ Glasgow University Students' Handbook, 1918-14, p. xix.

ST. ANDREWS.

St. Andrews stands as an example to the American advocate of the small, rural, secluded, inexpensive institution, immovable from its original site, appreciating the work of unbroken historic associations. The Pope's bull at the founding of the university reads, "Considering the peace and quietness which flourish in the said city of St. Andrews." Dean Stanley, impressed by the university's site, upon its high sea-girt promontory and its background of the ruins of cathedral and castle, says of it:

This secluded sanctuary of ancient wisdom, with the foamflakes of the northern ocean driving through its streets, with the skeleton of its antique magnificence lifting up its gaunt arms into the sky, still carries on the tradition of its first beginnings. It may still be said of the local genius of St. Andrews that, through all the manifold changes * * *, its spiritual identity has never been altogether broken, its historical grandeur never wholly forfeited.

St. Andrews is a demonstration of the practical impossibility of extinguishing or removing a college once planted and having generations of graduates. On account of the location of the university, in a town of scarce 10,000 inhabitants, and its small number of students and poverty, compared with its three sister universities in great urban centers, between 1870 and 1890 various propositions for change were made. One was to distribute both professors and students among the other universities; another was to alter the university into another kind of educational institution. The proposal to dissolve the oldest university of Scotland aroused keen protest. The outcome was the union of the university with the medical college and University College in Dundee.¹ Thus the addition of a fifth Scottish university was stayed, and the ancient university developed its faculty of science and its faculty of medicine with its first two years at St. Andrews, a notable experiment along the line of the American attempts at a bipedal college of medicine.

Possibly the record of the university in the production of political leaders, philosophers, and poets, indicates something characteristic which led it to see a great way off the movement for the higher education of women and to go out to meet it. Responding to the Edinburgh Association for University Education of Women, formed in 1869, in 1876 St. Andrews instituted examinations for the diploma for women, with the title of L. L. A. (Lady Literate in Arts). The title was the first formal precursor of a degree for women. It was a recognition of external examinations on a standard practically equivalent to that for the ordinary M. A. degree. Liberty was given to take up the subjects in any order and to spread the examinations over any length of time. As a semiuniversity extension and a semi-

¹ Cf. p. 57 and Ch. XIII, "Coordination of Institutions," pp. 197-198.

correspondence school movement, it was sometimes ridiculed "as a sham." It has justified itself at least as a transitory movement and has been strengthened by provisions for obtaining honors in certain branches and for a special diploma for teachers.¹

St. Andrews tends to become the Scotch Mecca for the higher education of women. It has by far the highest percentage of women in attendance of all the British universities (41 per cent, 1912-13). The location, as well as the policy of the university, encourages the attendance of women and suggests that where there are competing institutions one of them might more or less specialize for women. St. Andrews, with Edinburgh, first established a chair of education, while the other two universities still have only lectureships begun nearly 20 years later. Provision is made in *the university* for courses in methods of teaching for students, largely women, training for secondary school teacherships. The Scotch education department, through the St. Andrews provincial committee for the training of teachers, constituted in 1905, provides for full courses of instruction at St. Andrews and Dundee, and even makes maintenance allowances. In 1896 one of the finest stone halls of residence for women students, so planned that it could be extended from time to time, was opened and a warden of women appointed. The grounds, about 3½ acres, contain the women students' pavilion and lawn tennis courts and adjoin the extensive university athletic field given by Mr. Carnegie. Through the kindness of Mrs. Carnegie a permanent union for women students has been opened near the center of the university.

ST. ANDREWS AND DUNDEE.

St. Andrews and Dundee, together with Durham and Newcastle, are unique in the union by incorporation of institutions in different localities.² In the early seventies Sir David Baxter left a bequest for the founding of a mechanics' or technical institute in Dundee. As a result of a subscription of \$600,000 by Miss Baxter in 1881, University College in Dundee was founded, to have the same aims as Owens College, Manchester. The college authorities were empowered to amalgamate or cooperate with the inchoate technical institute. The latter institution was continued under separate management in a building adjoining the college, undertaking "grant-

¹ University of St. Andrews. "The L. L. A. Examination, Diploma, and Title for Women," 1914, p. 11. Total number of candidates entered from 1877-1912, inclusive, 25,551, of whom 8,492 received the title. The number of candidates in 1912 was 978, and titles received 125. The number of centers and places of examination in 1918 throughout Great Britain and Ireland and a few over-sea places was 52.

² Cf. Chs. I, "Oxford, Cambridge, Durham" p. 43; XIII, "Coordination of Institutions," pp. 197-198.

earning" instruction below university grade. The institute flourishes with an enrollment (1913) of 1,260 students.¹

By public subscription and by grants from the Scotch education department a site, buildings, and equipment costing about \$400,000 were accepted by the technical institute trustees. The technical college keeps to "those branches of learning necessary or useful for working mechanics or other craftsmen," and recognizes the special needs of the locality by instruction in jute and linen manufacture and by a navigation and marine engineering department.²

GLASGOW.

Glasgow University, only a half century the junior of St. Andrews, was founded in a little place of less than 3,000 inhabitants, insignificant then compared with the important and populous port of St. Andrews. It is now emphatically the urban university of Scotland, in its metropolis of a million, the second city in population of Great Britain and Ireland. "The smell of the Agora mingles with that of calfskin and midnight oil." More than once it has changed its site. It teaches the courage and virtues necessary for an urban university to escape from the coils of a rapidly enveloping city to a position where it can dominate the city, being in it but not of it. The imposing front of the new vast buildings, designed by the late Sir G. Gilbert Scott, towering from the extensive grounds of Gilmorehill occupied by the university in 1870, convey two warnings: Architectural features should be subordinated to scholastic requirements in collegiate buildings, and one huge structure should not be erected in place of a series of harmonizing groups of buildings with units that may be extended. The building, opened in 1870 and expected to afford accommodation for the increase of years to come, despite heterogeneous additions, soon proved inadequate. The 25 professors making a total staff of 35 teachers in 1870 increased to 36 professors, a total staff of 203 in 1914. The extension of laboratory instruction has required new buildings of a different type, which have been planted here and there as best they could be.

The earlier location of the university, in the heart of the city, affording facilities for the lodging of students, may have contributed to the disappearance of residential colleges, of which there is a dim

¹ The Dundee Technical College and School of Art is a happy illustration of the clear cleavage made by the Scotch education department's regulations and by university influence between school work and work of university grade. The demand of an industrial age for technical and art instruction below university standards (too often frustrated in the United States by the ambition of lower institutions to do university work) is successfully met by the Dundee Technical College taking over the evening technical classes of the technical institution and likewise the technical work of the high school and also of the Young Men's Christian Association.

² Cf. Ch. VI, "Technical Colleges and Schools," p. 138.

tradition, and the nonappearance of hostels until the founding of Queen Margaret College (1883). It is instructive to observe that this provision for women, as has not infrequently been the case in Britain and the United States, has introduced a movement for residential halls for men. In the face of the habit of centuries not to inspect or approve of students lodgings, Glasgow University announces that further developments of hostels are contemplated.¹

Glasgow illustrates the well-known advantages of an urban university. Wealthy citizens make voluntary contributions for buildings and endowments. Their cosmopolitanism and interests broaden and stimulate the subjects of instruction and research in the university. The prominence and political weight of the community attract students and governmental favor and grants. Eighteen professorships were founded during the nineteenth century, chiefly in applied sciences, including medicine under this head.

As early as 1840 Queen Victoria instituted a professorship of civil engineering and mechanics, later supplemented by gifts from Glasgow citizens. Even earlier (1823) the citizens had established the mechanics' institute apart from the university. The other branches of engineering have developed, and quite naturally Glasgow has the only chair of mining and the only university chair of naval architecture, including marine engineering, in Scotland. The latest happy step for applied science is the affiliation of the Royal Technical College, Glasgow, with the university.² The response of the university to its environment gives it a preeminence in industrial education. By a wise provision also it has an arrangement with the West of Scotland Agricultural College by which the degree of bachelor of science in agriculture is given without unnecessary duplication of work.³

Glasgow, ever since the establishment of its first engineering chair, for three-quarters of a century has favored the "sandwich system," made possible by the limitation of the university session for study to half of each year and the proximity to the university of workshops, offices, and shipyards for practical work the other half year. In recent discussions under the auspices in London of the Institution of Naval Architects, the Institution of Mechanical Engineers, and the Institution of Civil Engineers the preponderance of opinion has favored a full collegiate technical education with the sandwich system.⁴ Glasgow has been true to the combination of the theoretical and practical, associated with the beginning of the steam age by the

¹ Cf. Ch. XVIII, "Student Life."

² Cf. Chs. XIV, "Applied Science and Professional Education," p. 205; XIII, "Coordination of Institutions," p. 199.

³ Cf. Ch. VII, "Agricultural Colleges and Schools," p. 139.

⁴ The Institution of Civil Engineers, report of special committee on practical training of engineers, adopted July, 1914, W. Clowes & Sons, London.

name of James Watt, mathematical instrument maker to the university, and that of the electrical age by the name of Lord Kelvin, professor of natural philosophy and chancellor. A similar combination of theory and practice is required for the degrees of B. Sc. and D. Sc. in Public Health and of B. Sc. in Pharmacy.

For the former degree after graduation in medicine at least six months must be given to acquiring a practical knowledge in public health administration. For the latter degree, in addition to their academic courses, they must be either chemists or druggists registered under the pharmacy act or graduates in medicine. In like manner in chemistry a union of training in theory and laboratories with practical experience is advocated, as might be expected in an institution numbering among its graduates a chemist like Sir William Ramsay.¹ In the field of the political, economic, and social sciences this urban university suggests the value of the use of the community as a laboratory in these subjects. A combined course in political philosophy and social economics and a lectureship in economic history reinforce the chairs of moral philosophy, of political economy, and of history. The Glasgow University students' settlement society with its residence, founded in 1889, is the only *students'* settlement in Great Britain, although there are many conducted by graduates. There is also the Queen Margaret College settlement association, founded in 1897, with a settlement house.

The closeness of the university to the Scotch Nation is indicated by the recent endowment of the chair of Scottish history and literature. About \$100,000 was given from the receipts of the Scottish Exhibition of National History, Art, and Industry (Glasgow, 1911) and from contributions by the Merchants' House, Glasgow, and by a citizens' committee. While cheerfully yielding to a popular movement, the university "would remove any tendencies to parochialism, picturesqueness, and defective perspective which might arise if Scottish history were accepted as an isolated independent course" by requiring that the course for graduation purposes shall be preceded by or accompanied by a course in history. The wisdom, not to say caniness, of the Scotch university in preserving popular interest and not sacrificing university standards may be commended to Irish and certain colleges in the United States subject to national zeal.²

The participation of students in the government of the university, a common characteristic of the Scotch universities, is perhaps par-

¹ The university court has sent the draft of a new ordinance to the general council which provides that a degree of bachelor of science in applied chemistry may be conferred by the university (Oct. 14, 1914).

² A case in point would be compulsory Irish in the universities of Ireland or instruction in the language and literature of a considerable settlement of a given nationality in one of the States.

ticularly prominent in Glasgow, "from its foundation endowed with the privileges, liberties, honors, and immunities of Bologna." It has been peculiarly the students' university. Here and in Aberdeen alone survives the division of the matriculated students into four nations for the purpose of electing the rector.¹ The "liberties and immunities" of the students sometimes assert themselves spectacularly, especially in graduation ceremonies. The Times reports a recent example.² When the Lord Provost of Glasgow, an ex officio member of the university court, being unpopular with the students on account of his attitude toward Lord Robert's campaign for compulsory military training, appeared upon the stage in company with the principal, he was greeted with cries of "Put out the Lord Provost." Several professors left the platform and mixed among the undergraduates to restore order, but the students armed themselves with soda-water siphons and squirted the contents about. The capping ceremony was carried out practically in dumb show.

ABERDEEN.

The University of Aberdeen has a peculiarly Scottish flavor, standing in the granite-built city at the heart of the Province of Moray, well called the Scotland of Scotland. The visitor is constrained to join in the words of William Watson:

Hoary thy countenance and thy mien severe,
And built of the bones of Mother Earth thou wast,
But on thy heart hath fall'n no touch of frost,
O city of the pallid brow austere.
Grey, wintry-featured, sea-throned Aberdeen,
Thee and the towers of learning and of peace
That brood benignant on the northern foam.

And one who has been within the university hastens to add the lines of Thomas Hardy:

Behind that granite mien
Lurks the imposing beauty of a Queen.

The university in its early days had a district all its own, almost inaccessible from the south, from which it was separated by moor, mountain, and firth. It had and has largely preserved the virtues attributed to the pioneer American college. It was small and inexpensive. Its students were homogeneous, coming from plain and God-fearing homes. Relatives cheerfully sacrificed to send the student of the family through college. Parents actually supplied oatmeal and other provisions from home as late as 1870.³ No wonder

¹ Cf. Ch. X, "University Officers," pp. 174-175.

² The Times, June 21, 1913.

³ "The homes of the rural students, 1866-1870," Aberdeen Univ. Rev., vol. 1, No. 1, pp. 30-41.

its alumni are said to be cast in a stoic mold and to add grit to granite. They are scattered throughout the world, marked with an individuality all their own, and abounding in a loyalty to their alma mater. They have shown the value for more than thirty years of organizing university clubs at different centers, from Edinburgh and London to South Africa, to maintain a close fellowship between Aberdeen men and to promote the interests of the university.

A spirit of universality and progress has characterized this, by location, provincial university. Its original charter empowered it to establish any and all lawful faculties and to confer degrees with all the rights and privileges of those of the Universities of Paris and Bologna. Moreover, Parliament, in 1670, not content with confirming these privileges derived from the Pope, added those which might be possessed by "any other university whatsoever." We hear of a "Mediciner" in 1505, his chair being the most ancient foundation for medical instruction in Great Britain. A succession of fundamental changes has kept alive a notion of progress.¹ In 1583 there was a *Nova Fundatio*. In 1593 the founding of Mareschal College and University began a stimulating and sometimes stultifying rivalry, lasting for 267 years, making Aberdeen a unique double-star university. It narrowly escaped having a satellite in a third university.²

An attempt to unite the two universities in King Charles University in 1641 failed, but the successful union effected in 1860 has begun a new era. The very buildings proclaim the happy combination of the old and the new. In the union of the universities they did not, in American fashion, abandon the old group of buildings of King's College "unique in Scotland" and concentrate in the new granite quadrangles of Mareschal College, a mile or more away. With appreciation of architecture and historical associations, they preserved the old buildings and made them the center for the faculties of art and divinity for which they were appropriate. The chapel's ancient double-crowned tower, surmounted by ball and cross, signifying royal patronage, peals the message of the best of the old to the modern, Mitchell Tower of Mareschal College ringing in the new.

The modern tendencies of Aberdeen are shown in the opening in 1914 of the new building at King's College devoted to English and modern languages, and the housing in Mareschal of the Strathcona-Fordyce chair of agriculture, established in 1912, through the generosity of Lord Strathcona.³

¹ Rait, Robert Sangster, "The Universities of Aberdeen," James Gordon Bassett, Aberdeen, 1895.

² Rait, *supra*, p. 263, the University of Fraserburg, erected 1592, closed 1605.

³ For the modern movement in the happy correlation of universities and agricultural colleges, cf. Ch. VII, "Agricultural Colleges and Schools," pp. 139-143.

Lord Strathcona's active rectorship and his chancellorship to the time of his death set the name of Aberdeen in the forefront of the movement, that agricultural and modern subjects should be taught in the old universities. This is one instance of putting into practice the theory that higher educational institutions should not only be homes of knowledge, but also be leaders of thought, adapting themselves to modern requirements. This theory, advanced in his prophetic rectorial address in 1899 on "Imperialism and the Unity of the Empire," has been brought to bear on all Scotch institutions by another well-known Scotch-American and later rector of St. Andrews and of Aberdeen.¹ Thus begins the fulfillment of Bain's vision of 1882. "The university stands or falls with its arts faculty. The university exists because the professions would stagnate without it, and to enlarge knowledge at all points. Its watchword is progress."²

EDINBURGH.

Edinburgh, the only post-Reformation university in Scotland, the youngest and largest of the Scotch university sisterhood, stands nearer in several respects than any of the others to American institutions. Like most of the State universities, it evolved from an arts faculty under State patronage and without any attempts at a residential college system. It was the resort of the American students who went abroad to study, up to the time of the American Revolution. It is still in its clientele the most cosmopolitan of Scotch, if not of British, universities. Only a little more than one-half of its students are Scotch. The number of medical students from many countries is greater than that of any medical school in the British Empire. The city in its picturesqueness and literary fame, "the Athens of the north," has contributed to attract students. Almost naturally this is the only Scotch university having a professor of fine art and a faculty of music. It was the first British university to take up the study of English literature by the establishment (1760) of the professorship of rhetoric and English literature, made famous by its first occupant, Hugh Blair. The influence of this in American colleges has been great. The recognition of English among the classic disciplines inaugurated the "new education," introduced into Yale College under the elder President Dwight at the close of the eighteenth century, and Blair's Rhetoric was the standard textbook for 100 years in the colleges.

Edinburgh has been ready to recognize newer subjects of instruction perhaps because the creation of chairs was in the hands of a lay body, the town council, until 1858, and since then they appoint

¹ Carnegie, Andrew.

² Bain, Alexander, rectorial address, Aberdeen, 1882, p. 27.

four out of the seven "curators of patronage" for many chairs. The multiplication of and specialization in subjects doomed "regenting," by which each "regent" taught every subject in the curriculum, and developed a genuine professoriate. The system was first finally changed by Edinburgh in 1708.¹

From 1889 to 1913, inclusive, not less than 21 professorships and 156 lectureships have been added to the staffs of instruction in the four universities. Most of these additions have been in modern subjects, in applied science, and more particularly in medicine. The few professorships compared with lectureships, and the consequent inferior representation of the latter in the councils of the university, is a cause of complaint.² A lecturer in French feelingly voices it, saying, "The Scottish universities find themselves to-day in the position of not possessing a single chair of modern languages or literature." He makes the sweeping induction that the Carnegie trustees, despite Mr. Carnegie's wish, have done little for modern education, having "allowed themselves to be overruled and dictated to by the Scottish universities, which are the most conservative, and, in the opinion of many, the most reactionary bodies in the United Kingdom."³ The disproportion between the addition of 4 professorships to 86 lectureships in the last 25 years at Edinburgh may convey one of two lessons to American colleges. Some institutions need to learn the virtue of thrift and of not creating improperly paid chairs, others not to multiply subjects of instruction before they are able to give them efficiently.

In 1876 Edinburgh and St. Andrews established each a chair of education, still the only full chairs in Scotland. Edinburgh has just instituted a faculty of education.⁴ A fresh advance is being pressed upon the universities and is under consideration in the university councils. The teachers, through resolutions by the Educational Institute and the Secondary Education Association, wish not merely the recognition of "education" as a university subject but also provision for "education" as a profession. They call for a postgraduate degree analogous to that in divinity, law, and engineering. Glasgow has regulations for a general diploma in education, also for a diploma with distinction open to graduates who satisfy certain requirements as to professional training and practical skill. Aberdeen announces

¹ Glasgow followed, 1727; St. Andrews, 1747; Mareschal College, 1753; and King's Aberdeen not till 1798, Bain, *supra*, p. 20.

² Cf. Ch. XI, "Provisions for the Faculty," pp. 184-185.

³ Sarolea, Charles, Edinburgh University, "How the Carnegie Millions are Mismanaged in Scotland," "Everyman," July 25, 1913, pp. 465, 466. In 1913 bequests are announced in Edinburgh and Glasgow toward the endowment of chairs in French and German.

⁴ Edinburgh's requirements for B. Educ., a postgraduate degree, succeeding the Scotch first (M. A.) degree, are a diploma of education of Edinburgh, at least one year's further training in educational subjects, and a complete course of not less than five years.

a higher course, qualifying for a degree in education, will be given if required. These steps, corresponding to the certificate in education offered in connection with the first degree in many American colleges, do not go far enough to satisfy the recent demand, which hopes that education will come to its own as a profession with graduate study and degree. Many would go beyond an M. A. degree with honors in education and institute a doctorate in education, corresponding with the Ph. D. and D. Litt., and thus greatly enhance the status of the teaching profession.¹

There is here a confirmation of the usage of the American Ph. D. for teachers and a possible hint for the more specialized degree of doctor in education as a high degree for outstanding representatives of the teaching profession in lieu of the indiscriminate conferring of the LL. D.

Edinburgh has the honor of the first chair of agriculture (1790) and of being the first institution in Britain to give a degree in agriculture.² As the university had the wisdom to round out its department of agriculture by associating itself with the Edinburgh School of Agriculture, so it has regulations and a curriculum for the degrees of B. Sc. and D. Sc. in Veterinary Science by association with the "Royal (Dick) Veterinary College." Similarly, the university has rounded out its engineering department for the degrees of civil, mechanical, and electrical engineering in conjunction with the Heriot-Watt College.³

Among the most modern movements, the university instituted in 1905 the diploma in tropical medicine and hygiene open to graduates in medicine and surgery, and under certain conditions to registered practitioners. A special certificate in diseases of tropical climates is also obtainable. Regulations for a diploma in psychiatry represent one of the latest advances which should encourage the few institutions in the United States undertaking this work. A happy hint of combination courses in arts and law is contained in the three chairs common to both the faculties, constitutional law and constitutional history (1719), commercial and political economy, and mercantile law (1871), and ancient history and paleography (1901). The faculty of science, embracing also applied science with 13 chairs, has 2 chairs in common with the faculty of arts and 7 with the faculty of medicine. This interlocking of faculties preserves the common university spirit in an age of intense specialization.

¹ University of Glasgow, Gen. Council Reports, Apr. 29, 1914, pp. 84, 86; Oct. 27, 1915, pp. 24-27. Cf. Ch. XIV, "Applied Science and Professional Education," pp. 210-211.

² Cf. Ch. VII, "Agricultural Colleges and Schools," p. 189.

³ Cf. Ch. XIII, "Coordination of Institutions," pp. 198-199.

The university old building of stone, "simple and dignified," with its great quadrangle dating from the early nineteenth century, illustrates a common mistake of urban universities in not providing for extension and ample grounds. The new buildings therefore are scattered through the city. The importance of an outward sign of the unity of the university and of a common meeting place and academic ceremonial is taught by "an architectural monument not excelled by any academic building in the country." This is not saying too much of the university hall, named after its donor "M'Ewan Hall," in a land abounding with spacious and dignified university halls and considered one of the first necessities by every university.¹

The prominence of the university in medicine has led the Carnegie Trust to set aside \$50,000 toward the joint scheme for the creation of an institute of medical research as a memorial to Lord Lister—another recent example to schools of medicine of the value of research in connection with universities rather than in separate institutes.

Edinburgh has instituted means for preserving and extending the cosmopolitan atmosphere characteristic of every university. It has international academic committees, one of the senatus and the other of the students' representative council, to give information to foreigners desirous of studying in the university and to Edinburgh University students intending to study in foreign universities.

The students' committee maintains a unique system of international academic consuls at the chief European universities, to whom it issues letters of introduction. In accordance with ancient Scottish traditions of close relations with France there is also a Franco-Scottish society to assist French students in Scotland and Scottish students in France. The university is just receiving a bequest, the annual income of which is to be applied to the establishment of scholarships for research in the history and development of the religions of eastern peoples, which is another significant recognition of cosmopolitanism in Scotland.

¹ The hall of theater form, and of the early Italian renaissance style harmonizing with the other university new buildings, seating 2,600 people, was finished in 1897, at a cost of about \$575,000.

Chapter III.

UNIVERSITY OF LONDON.¹

The University of London is *sui generis*, and still in the making. Despite an attempt in the sixteenth² century, London is almost the last of world capitals to found a university, and it is still in the hands of a departmental committee following the royal commission. During the four-score years of its existence it has been repeatedly reconstituted and has tried manifold experiments, making it prolific of suggestions. It was the first of modern universities in the Empire, and more specifically of the newer or civic universities. In its primordial germ, University College, may be traced the Scotch influence of the Universities of Edinburgh and Glasgow. In 1825 Thomas Campbell, the poet, wrote a letter to Mr. Henry Brougham, lord rector of the University of Glasgow, urging the foundation of a great London University. A number of prominent Protestant nonconformists, who were considering the establishment of a college without religious tests then required at Oxford and Cambridge, became subscribers with Campbell and his friends to form an "association, or institution, by and under the name of The Proprietors of the University of London," and by 1827 had raised the capital sum of \$800,000. Oxford and Cambridge were successful in opposing the granting of a charter. Nevertheless, University College, under the title The University of London, was opened in 1828 without a charter.³ University College was the first to open English university education to students of all religions, races, and nationalities. At that time, naturally, a rival institution was founded in King's College, "as a college in which instruction in the doctrines and duties of Christianity as taught by the Church of England should be forever combined with other branches of useful education." Excepting for their distrust of a purely secular education, the found-

¹ See tables 4 and 5.

² In 1548 Sir Thomas Gresham endowed seven professorships and gave his mansion for those unable to go to Oxford and Cambridge, and we still have Gresham College. Stowe's "Annales," 1615, refers to the three famous Universities of Oxford, Cambridge, and London. In 1647 an anonymous "Lover of his Nation" proposed a University of London teaching not only Latin and Greek and Hebrew, but also the modern languages by the conversational method. "The Beginnings of the Teaching of Modern Subjects in England," by Foster Watson, London, 1909, p. 482.

³ Cf. pp. 72-76.

ers of King's represented the same progressive movements as those of University College, to widen the range of subjects taught in the universities and to reduce the expense of a university education. King's under royal and State-church patronage had little difficulty in securing a charter in 1829, while its earlier proprietary nonsectarian rival suffered delays. In the end the Government patched up a compromise which has had unexpected and far-reaching results.

The same day on which University College received its charter, a third body politic by the name of the University of London was sealed with power to examine and confer degrees on certificated students from University and King's Colleges and other institutions. Naturally the university exercised widely its power of recognizing institutions which sought the privilege of granting certificates to students seeking degrees. The senate had no visitorial authority and could only test the efficiency of the institutions by the examinations of their students.¹ Thus the university became known as the Examining Body of students from numerous and unequal schools privileged to grant certificates of attendance. The result was the charter of 1858, practically abolishing the exclusive connection of the university with the affiliated institutions and opening its degrees to all males able to pass its examination, excepting that in the case of medical degrees evidence of attendance and clinical practice at some medical institution was still required. The abolition of required collegiate attendance made it desirable "to seek other guarantees for continuous study." Intermediate examinations were added to the final and the tests made more severe, exalting on the scholastic side the value of a London degree in the eyes of the public. An era of expansion immediately followed. Candidates for matriculation rapidly increased. The university, which from the beginning had required English in addition to Latin and Greek for matriculation, now included English philology and literature in the examinations for degrees and honors in arts. It was the first to confer the degree of doctor of literature. It organized for the first time in England a faculty of science, and in 1860 began to hold examinations for the degrees of bachelor and doctor in that faculty. Degrees were instituted in laws in 1867, in music in 1877. The university also instituted special examinations as early as 1839 in the Hebrew text of the Old Testament, the Greek text of the New Testament, the evidences of the Christian religion and scripture history, in subjects relating to Public Health (1876), and in the art, theory, and history of teaching. A charter of 1863 empowered the senate to confer the degrees of bachelor and master in surgery. In 1867 a supplementary charter gave the power to institute special

¹ Cf. Ch. XVI, "Examinations," p. 228.

examinations for women, and the reform act of the same year gave the graduates the right to send one representative to Parliament.

In 1878, under another supplemental charter, the university became the first academic body in the United Kingdom to admit women as candidates for degrees. Despite these changes, there was constant agitation for further reforms in the university. The Royal Colleges of Physicians and Surgeons, realizing the opportunities for clinical teaching in London and the small number of university degrees obtained in proportion to the number of students, sought power to grant degrees in medicine and surgery. The association for the promotion of a teaching university for London, formed in 1884, inspired a petition of University and King's Colleges for a charter incorporating a body of persons with power to grant degrees. The general view was that the professoriate in the colleges was hampered by the syllabuses and examinations prescribed by outside authority and lost in a measure *lehrfreiheit*. It was believed also that "students working under varied conditions" suffered from "the necessary want of elasticity in regulations." Moreover, it was strongly felt that a university should not only examine and confer degrees, but also teach and advance research. A visible university was sought commensurate with the capital of the Empire. Some of the advocates of reform believed in the—

establishment in London of a second university composed of colleges only and recognizing none but bona fide students in those colleges, the present university remaining an Imperial institution granting degrees and honors to all comers on condition of examination only.

Others objected to two universities on the ground of confusion and overlapping and urged the establishment of a teaching university in connection with the existing examining one. The Government referred the whole question to a royal commission.¹ They reported in favor of combining a teaching with an examining university and that there should be one, not two universities, and limited to institutions in or near London. They saw no reason why the university should not continue to admit students to its examinations and degrees, irrespective of the place or manner of their education. The scheme was finally rejected by convocation. A new royal commission² reported in 1894 that there should be one, not two, universities and that teaching and external examinations could be combined without injury to the students. They decided that the problem was still that stated by the commissioners of 1888, viz, how to coordinate the

¹ The commission, under the presidency of the late Lord Selborne, was appointed, and made its report in 1888.

² The commission appointed in 1891 reported in 1894. It was known as the "Cowper commission," from the name of its chairman, or the "Gresham commission," because of the reference to it of the petition of the colleges for a separate teaching institution to be known as the Gresham University.

recognized teaching institutions of London under a central university. After four years of further discussion in 1898 Parliament passed an act for the complete reconstitution of the university in general harmony with the recommendations of the last commission. The act was put into effect in 1900. But the problem of coordination was only partially solved. The two pioneer and great colleges, University and King's, desiring to strengthen the university, especially the teaching side, and to secure "unity of aim and interest in all that relates to advanced education and the promotion of original research" proposed the incorporation of the colleges into the university. University College led the way and was transferred to the university in 1907 and King's in 1910. At the same time the Women's Department of King's College, founded in 1881, was incorporated into the University as King's College for Women.

Thus the close of the first decade of the reconstituted university saw an approximation to the ideals of the founders of University College in the nucleus, through the incorporation of several colleges, of a single teaching university, and that essentially a Federal one. In the same decade the new constitution had been experimentally tested in a period of rapid expansion. The old complexity of the university problem was increased by the extension of the curricula to cover general, professional, and technical education in a vast agglomeration of heterogeneous institutions, teachers, and students, as a brief glance at the outstanding features will show.

The highest governing and the executive body is the senate, consisting of 56 members, inclusive of the chancellor and the chairman of convocation.¹ Four are appointed by the King in council, 16 are elected by the convocation, 16 by the teachers in the respective faculties, and the others, 2 each, by the incorporated colleges and by bodies representative of the medical, legal, and technical professions and also of the City of London and of the London County Council. Within the senate are three standing committees or councils from whom it is bound to receive reports before coming to any determination upon the matters specifically within the province of the committees. One of these is the Academic Council.² The council for external students advises upon all matters relating to them. The board to promote the extension of university teaching advises concerning arrangements for that work and its students and for the examination and inspection of secondary schools. The convocation consists of the graduates of the university of three years' standing and the members of the three councils named. It elects, besides its quota of members in the senate, the member of Parliament for the

¹ Cf. Ch. IX, "Organisation and Administration of Universities," p. 162.

² Cf. *Ibid.*, p. 165.

university and the chancellor of the university. The convocation may discuss university affairs and lay their conclusions before the senate. The eight faculties consist of the "appointed teachers" and other teachers of the university admitted by the senate.¹

The teachers are assigned to their respective faculties by the senate and may be assigned to more than one faculty. Each faculty elects its own dean for a term of two years, reeligible for a second term. A faculty reports to the senate on any matter referred to it by that body and also upon courses of study, teaching, and degrees pertaining to that faculty, and elects its representatives in the senate. The boards of studies, numbering 37 in 1913, are appointed by the senate and may include persons other than teachers in the university not exceeding one-fourth of the total number of a board. Each board may report to the senate direct, transmitting a copy to the dean of the faculty concerned. The academic council and the council for external students, before advising the senate upon matters within the province of the boards, are to invite and receive reports from them. The staff of instruction of the university consists of three categories. First are "the appointed teachers," professors, assistant professors, readers, and lecturers appointed as officers of the university by the senate and paid by the university. "Recognized teachers"² are those recognized by the senate among members of the teaching staffs of public educational institutions within the university's appointed radius of 30 miles, whether schools of the university or not. "Nonrecognized teachers" are those in schools of the university teaching in courses of study approved by the university.

The teaching of the university is carried on in three groups of institutions. In the first group are those belonging to the university and controlled by it, either directly or through a committee; in the second group are "schools of the university," each controlled by its own governing body. They must be public educational institutions, not conducted for private profit, situated within the administrative County of London, and providing education of university standard. The senate may admit the whole of such an institution or only a department or branch of it. The third group consists of other public educational institutions within the appointed radius having "recognized teachers." These more than threescore institutions of different types and kinds of connection with the university afford some concept of the institutional complexity of the university.³

¹ The faculties are theology, arts, laws, music, medicine, science, engineering, economics, and political science (including commerce and industry).

² At the beginning of the session 1914 the number of "appointed teachers" was 99; of "recognized teachers," 775.

³ Cf. table on pp. 264-265.

The institutions described form an organic center which, by a system for "external students" and examinations, reaches throughout the Empire. "Internal students" are those who have matriculated at the university and who are pursuing a course of study approved by the university, under the direct control of the university, or in one or more schools of it, or under one or more of its recognized teachers. "External students" are all other matriculated students. They may pursue their studies where and how they please. This gives an opportunity not only to "university colleges" but also to private institutions and individuals far and near to prepare their students for London University examinations and degrees. Not only have coaching or tutorial centers sprung up but what are now widely known as correspondence schools.

An unlimited number of unaffiliated institutions is brought within the shadow of the university by the provincial and colonial examinations. A provincial institution requesting it may be named as a local center for one or more examinations to be carried on simultaneously with examinations in London under the supervision of sub-examiners appointed by the senate. Similarly examinations are held in any colony upon application of its authorities. The influence of the university is consciously extended to the utmost bounds of the Empire. The hugeness of the university may be measured by the number of candidates and passes for matriculation for the several degrees and for diplomas in pedagogy since the foundation of the university. From 1838 to 1912, inclusive, the number of candidates was 262,452, of whom 137,855 passed. The annual number of all examinees (1913-14) was 11,920, of whom 6,343 were successful. To the extramural activities of the university, with their ramifications throughout the Empire, one must add the work of university extension carried on in the metropolitan area, with 120 courses, and 100 or more school examinations or inspections.¹

UNIVERSITY COLLEGE.

For the purposes of the present study the sketch of the evolution of the university must be supplemented by a glance at three or four of the institutions which have been prominent factors in its development. The first of these is the University College, London, the original teaching institution of the university.² It surrendered its previous title of the University of London to the new examining body in 1836 upon the condition that it should be one of the schools named in the charter of the university as entitled to send up candi-

¹ Cf. Ch. XIX, "University Extension Teaching," p. 249.

² Cf. "Notes and Materials for the History of University College, London, Faculties of Arts and Science." Edited, W. P. Ker, 1898 (London).

dates for degrees. It remained a proprietary corporation with its own charter in a "practical connection, not an organic or constitutional connection." The college had legally the constitution of a joint stock commercial company. The proprietors originally elected from among their number a council of 24 persons to have the management and control of the university and its property, the appointment of professors, "and to regulate the whole plan or course of education." By 1842 shares that had lapsed or had been ceded to the council were bestowed upon former students of the college who had graduated with honors, making those upon whom shares were thus conferred proprietors for life, with the title of "Fellows of University College, London." Nevertheless, the number of proprietors naturally diminished in time. To provide for the permanent existence of the college as a public educational institution the council obtained an act of Parliament in 1869 reincorporating the college and divesting it of its proprietary character.

It is important to note that the council continued as the executive, and provision was made for a succession of fellows. It is still more important to note that in 1886 for the first time three professors of the college were elected members of the council and the number increased in 1888 to six, at which number it has remained. The important development of the principal and practice of the representation of the teaching staff upon the governing board of an institution is illustrated by the constitution of the college committee. When (1907) the college was incorporated into the University of London,¹ while the power and property of the college corporation were transferred to the university senate, there was constituted a college committee to advise the senate and to superintend the work carried on upon the college premises. One-quarter of the college committee of 24 members, elected annually by the senate, were members of the "professorial board,"² elected after a report of the board. The preservation of the lay element was insured by the provision that of the remaining three-fourths of the committee not more than one-third should be teachers of the university. The further representation of the university is secured by the right of the vice chancellor, the principal of the university, and the provost of the college appointed by the senate to attend and speak, but not to vote at meetings of the committee. The treasurer of the college is appointed by the senate from the membership of the college committee. The college committee submits to the senate a financial estimate for each ensuing year, and the senate allocates to the committee funds, the expenditure of which it controls for the purposes of the college. The committee of the college has conferred upon it by the senate the

¹ CL. Ch. XIII, "Coordination of Institutions," p. 195.

² CL. p. 74.

powers usually exercised by the governing body of a school of the university. The senate must take into consideration a report of the college committee before changing any statute or regulation relating to the management of the college.

The representation of the college on the senate was provided for by the co-option by the senate of two representatives of the college after consideration of a report from the college committee. The college committee became the nexus between the senate and the teaching staff by the establishment of a professorial board for the purposes of the statutes and of advising and making suggestions to the college committee on all academical matters and on the general management of the college. The professorial board consists of the provost, the librarian, the professors and all persons appointed as readers, lecturers, assistant professors, or granted the title of assistant professor, nominated to be members of the board by the senate upon report from the professorial board. The professorial board is represented on any board of advisors of the senate in the election of professors, readers, or lecturers to teach exclusively in the college buildings. The professorial board also reports to the college committee on any proposal to appoint an assistant professor, reader, or teacher other than an assistant or demonstrator. The professorial board is divided into college faculties by the senate upon a report from the college committee. The provost has the right to attend and speak at the meetings of any faculty. Each faculty elects annually, by ballot, one of its members as dean. Communications from the college committee to the faculties are made through their respective deans.

Especially noteworthy is the care taken for the appointment of the teaching staff upon merit and the ingenious coordination of all the bodies concerned. A board of advisers is constituted when professors, assistant professors, and readers are to be appointed. The board consists of the vice chancellor, the principal of the university, the provost, and six persons, of whom three are "external experts," chosen by the senate of the university, and three appointed by the senate on the nomination of the professorial board. The three appointed by the senate on the nomination of the professorial board are selected with reference to the post to be filled. The advisory board in nominating a candidate are bound to have regard to his contribution by research to the advancement of science or learning, his powers as a teacher, and generally his eminence in his subject or his profession. The report of the board is sent simultaneously to the academic council and to the professorial board. The academic council, after receiving a report from the professorial board, forward the report of the board of advisers, with the council's comments, to the senate, who make the appointment. The senate, however, may appoint an

assistant professor after receiving a report from the college committee through the academic council. Every proposal for appointing an assistant professor in any department must originate with the head of the department, he having submitted the question for consideration to the professorial board. In like manner the college committee may recommend to the senate to institute or to discontinue any professorship, assistant professorship, or readership.

The governmental devices by which the college preserved its continuity and increased its influence in the bosom of the university are only less suggestive than the realization of the scope of the college "as a place of teaching and research in which wide academic culture may be secured by the variety of the subjects taught in different faculties, including preliminary and intermediate medical studies." It has been the pathfinder of modern colleges in the Empire, and together with King's College has leavened the lump of the university. It has developed the professoriate, organized with departments as units and with representation of the entire teaching staff even in the supreme governing body. It is modern in its range of instruction, recognizing the newer subjects as upon an equality with the older and organizing professional and technical faculties side by side with the arts faculty. It has been the model of the newer nonsectarian, nonpartisan, nonresidential, and coeducational semi-State institutions. It has cherished the spirit of modern research¹ so that in 1913-14 it had 450 postgraduate and research students, the largest number in any institution in the Empire. This may not be attributed chiefly to the college's happy location, but to its spirit, conduct, and increased means, especially since 1902. The spirit descends from the founders, who laid great stress upon the possibility of ascertaining the "conditions of human happiness and well-being" by special studies. The multiplication and subdivision, with increased specialization in subjects of study, have developed chairs into departments equipped with departmental libraries and research laboratories and museums. Reference to some subjects will illustrate.

With the introduction of the latest studies, the humanities have not been forgotten. They have been strengthened by chairs or lectureships in archeology, comparative philology, Sanskrit, architecture, the fine arts, and incidentally by Germanic and romance philology. English was a required subject from the earliest days of the institution and has had a line of famous teachers. In addition to the modern European languages an echo of the imperial note is caught from the list of modern oriental languages.² The attempt to keep

¹ Cf. Ch. XV, "Advanced Study and Research without Graduate Schools.

² The list includes Arabic, Bengali, Burmese, Gujarati, Hindi, Hindustani, Marathi, Palli, and Buddhist literature, Persian, Tamil and Telugu, and Tibetan. The list is supplemented by notice of instruction at King's College in the following languages: Japanese, Chinese, Russian, Turkish, Swahili, Malay, Hausa, and Zulu.

up with the progress of the times in the introduction of new disciplines may be culled from the provost's annual report.¹ An experimental phonetics laboratory has been opened for the department of phonetics. This department acts as an auxiliary to all the language departments and includes instruction in spoken English. The work of the department of history will be extended this year by the institution of a lectureship in American and colonial history—the first permanent provision for instruction in this subject in Great Britain.

The purchase of the Flinders-Petrie collection for the college's famous department of Egyptology, of which Prof. Flinders-Petrie is the head, also brings to light the value of fieldwork associated with a college department. A staff of as many as 10 workers has been maintained in Egypt, making collections and contributions to publications possible. Somewhat analogous for purposes of research is the increased attention given to fieldwork in the sciences, an instance of which is the establishment of a field laboratory for the department of botany.

The college maintains its policy of welcoming modern subjects to its curriculum. In the department of applied statistics and eugenics, equipped by its biometric laboratory, applied statistics will be recognized as one of the subjects for a bachelor of science degree. Military science also is one of the subjects for a pass degree. The latest departure is the institution of the department of heating and ventilating engineering.²

The college's policy of expansion, the necessity that it should be free from debt in order to be incorporated into the university, and its faith in the State shown by this act, have not only secured State aid, but also enlarged support from private munificence; \$1,000,000 have been raised in the fund for the advancement of university education and research, inaugurated in 1902 with a view to the incorporation of the college and followed by gifts from individuals and city companies.³

The event of the twenty-first anniversary of the Student's Union Society was the occasion of the provost's report taking up the social and athletic side of the college activities, which brings to mind the rise of the problem of corporate life in nonresidential colleges, treated in the chapter on student life.⁴

¹ July 2, 1914.

² The first professor of town-planning is about to be appointed.

³ At the end of 1912 the equipment and endowment fund appeal committee reported total receipts of \$2,092,050 expended to pay a debt and for the medical and boys' schools as well as for the college. In addition are increases in annual grants for terms of years for \$50,000. They now appeal for \$669,810 as urgently needed. The London County Council has just made a grant of \$150,000 toward this.

⁴ Cf. pp. 239-248.

KING'S COLLEGE.

King's College, the second college incorporated in the university, shared with University College in the movement for the creation of a teaching university between the years 1880 and 1900. Thus the way was prepared for the substitution of cooperation in place of competition between the colleges after 80 years of rivalry. The organization of King's before its incorporation in the University of London, effected in 1910, and its administration since then are essentially the same as in University College.¹ The theological department of the college was not incorporated in the University of London, but was constituted a school of the university, remaining under the government of the council of the college, of which it forms a part for certain purposes. All students of the college have the right to attend the chapel. An act of 1903 had abolished, except in the faculty of theology, the obligation for the teaching staff and members of the council to be members of the Church of England. When King's abolished the religious test the original point of difference between the two colleges largely disappeared. The passing of a theological age has brought home to King's the worth of freedom with a religious atmosphere and to University College the worth of reverential faith with freedom.

It should be noted, however, that the university itself, though non-sectarian, acknowledges religion. It has its faculty of theology, not supported by the State but by the different denominations. On presentation days a service under the auspices of the students is held in Westminster Abbey, attended by the officials of the university, the teachers, and those taking their degrees, attendance being voluntary.

King's College has always been a multiform institution. Originally it consisted of a "senior department" and "junior department," and almost immediately a medical department was added. The institution was responsive to popular demands. "In 1838, owing largely to the development in engineering caused by the growth of the railway system, an engineering department was founded." This was enlarged into a department of applied sciences. In 1839 the first hospital was built. In 1847 the theological department was added. In 1856 evening classes were formed and became one of the largest departments of the college, until cut down by the rise of polytechnic schools. Naturally King's, with its church relationship, entered upon this work. The movement for metropolitan evening classes originated with a clergyman of the Church of England, who announced in 1848 classes in Crosby Hall. The purpose of a committee of clergymen in opening evening classes "where instruction

¹ Cf. Ch. XIII, "Coordination of Institutions," p. 195.

in the languages, arts, and sciences may be given in a familiar form at an easy rate" was "to improve the moral, intellectual, and spiritual condition of young men in the metropolis." The City of London College, acting in conjunction with the London Chamber of Commerce, continues as a monument of their movement.

King's College went to the length of forming classes to prepare for the examination for the home civil service, and ultimately the Strand School was organized for the purpose. In 1861 an oriental section was started and temporarily prepared for the examination for the Indian civil service. In 1877 classes held for women in Kensington originated the movement which resulted in the establishment in 1885 of the "ladies' department," in 1892 known as the "women's department," now King's College for Women, with its latest development of a household and social science department. The last is the first university department of its kind in this country. The statement of the college is justified in saying that it is—

distinguished for the readiness with which it adopted new developments. The engineering school is one of the oldest in the United Kingdom. King's College was the first institution in London to develop evening teaching of an advanced type. The Wheatstone laboratory of physics is older than any students' laboratory of the kind in England or Germany. The laboratories of comparative pathology and bacteriology and the William Siemens laboratory of electrical engineering were among the first in these subjects to be started in London.

Though the large attendance at the college was reduced by the act of incorporation, setting up the standard of university level for students and resulting in the separation of King's College school, the Strand School, and the civil-service department from the college, it continues its popular character by the retention of evening classes, its department for the training of teachers, and its provision for "occasional" students. The spirit of the original foundation by the church may survive in the terminal reports sent to the parents or guardians of students and "the collections"¹ at the end of each term. Herein it has one of the best features of a college, while, like University College, with its various faculties and schools, it is a germinal or collegiate university. The scheme for intercollegiate classes among these colleges and the school of economics is a proof of new cooperation and a promise of the growth of the university.

IMPERIAL COLLEGE OF SCIENCE AND TECHNOLOGY.

The nucleus of the university on the teaching side has been greatly enlarged by the 31 "schools of the university" related to it since its reconstruction in 1900. Especially has it been stimulated by the

¹ "Collections" are gatherings at which every student is required to be present and be individually interviewed by the principal and staff as to his progress. This old practice of some Oxford colleges was introduced at King's by Principal Headlam.

Imperial College of Science and Technology, a "school of the university," in science and engineering. This strong independent foundation in the opinion of some should be made a separate "technical university." On the other hand, the article in its charter of incorporation in 1907 establishing it "in the first instance as a school of the university pending the settlement of the question of the incorporation" looks forward to its becoming a college within the university. The article provides that the governing body "shall enter into communication with the University of London with regard to the coordination of the work of the Imperial College with the work of the university and its other schools."

The history of the Imperial College and its present organization are a fine example of the process of coordination of London institutions. The Imperial College is really a group of associated colleges under a common board of governors. The integral parts are the Royal College of Science, the Royal School of Mines, and the City and Guilds (Engineering) College. The governing body consists of 40 members representing the Crown, the board of education, the University of London, the London County Council, the City and Guilds of London Institute, the royal commissioners of the exhibition of 1851, the Royal Society, the professorial staff of the Imperial College, and representatives of learned societies connected with industries. A delegacy of 19 members administers the City and Guilds (Engineering) College.

The Royal College of Science and Royal School of Mines are results of the great exhibition of 1851, which awakened England to the importance of technical and art education. Chameleon-like, the original institutions have undergone a succession of changes responsive to their progressive environment. It started in 1851, known as the Government school of mines and science applied to the arts, and located in connection with the museum of practical geology. In 1853, at the time of the foundation of the Government department of science and art, to meet a demand for widening the scope of the schools, it having also taken over the "Royal College of Chemistry," earlier founded by private enterprise, it was renamed the "Metropolitan School of Science applied to Mining and the Arts." In 1859 the general and technical divisions of the school were abolished, and the title was altered to "the Government school of mines," in 1863 changed to the Royal School of Mines. In 1864, at the request of the board of admiralty, a "Royal School of Naval Architecture and Marine Engineering" was established at South Kensington in connection with the Royal School of Mines, which was transferred to the Royal Naval College at Greenwich in 1873. In 1869 summer courses for teachers were commenced. By 1873 the expenses even of teachers were paid, and a free education was given

them at the school. By 1881 a training school for science teachers was established, and the title of the institution was changed to "The Normal School of Science and Royal School of Mines." In 1882 a department of agriculture was added and existed till 1897, by which time it appeared that this work should be in agricultural colleges located on the land. In 1890 the title of the Normal School of Science was changed to that of the "Royal College of Science," and under this name was incorporated with the Royal School of Mines. The third associated college, "The City and Guilds (Engineering) College," is the offspring of the "City and Guilds of London Institute for the Advancement of Technical Education," formed in 1878 by the livery companies of the city of London in conjunction with the corporation. The institute was founded and housed in 1884 in South Kensington, as a "central technical college," to provide more advanced courses in engineering and technical chemistry applied to productive industry than those offered by the city and guilds college at Finsbury. In 1889 it was included as a school of the university in engineering and became the engineering section of the Imperial College, under the name of "The City and Guilds (Engineering) College."

The charter of the Imperial College contemplated a central institution of the highest rank and capable, like the university of standardizing and affiliating technical colleges. It reads:

The purposes of the Imperial College are to give the highest specialized instruction and to provide the fullest equipment for the most advanced training and research in various branches of science, especially in its application to industry.

The governing body is empowered to "establish colleges or other institutions or departments of instruction" which "shall be integral parts of the Imperial College." In 1909, under power given by the charter, the governing body of the Imperial College recognized the metallurgical department of the University of Sheffield as being in association with the Imperial College for the advanced metallurgy of iron and steel, and the recognition was allowed by the King in council. In 1912 the governing body, moved by a request from the Huddersfield Technical College, determined to adopt the policy of visiting an institution applying for the recognition of its courses of study, and of approving the desired courses and accepting them in lieu of first or second year Imperial College courses. The provision of the charter calling for communication with the University of London with regard to the coordination of the work of the college with the work of the university and its other schools has borne fruit in the establishment of a joint committee in engineering of the university and of the college, and a program of work has

been accepted by the university and the college to avoid unnecessary overlapping.

Similarly, annual conferences have been arranged among the heads of the departments of science, other than engineering, in University, Kings, and Imperial Colleges, and such other schools of the university as may be willing to cooperate to consider the proposals with regard to the work of such departments. Intercollegiate arrangements have also been made among the above-named institutions, and students may be admitted on the recommendation of the professor under whom they are working to any corresponding special course at any other of the above colleges. It is reported the above schemes do not work very perfectly. The difficulty of the coordination of curricula is heightened by a characteristic feature of the Imperial College to have a student engaged in one subject of study during a complete half session. Coordination is sought by the college by concentrating there the advanced and postgraduate courses. This policy is favored by the traditions of the college, with its Huxley laboratory of research, founded in memory of him as the first dean of the college, and by the provision of a research laboratory in each department. The college has unparalleled conveniences for investigation in its proximity to the science division of the Victoria and Albert Museum, the Natural History Museum, and the Imperial Institute. In its scientific laboratories, equipment and buildings, the Imperial College excels any of the other institutions in London and is one of the greatest in the world.¹ In conclusion, one may infer that the imperial multiform college, as yet only a school of the university, in contrast with the incorporated University and King's Colleges, may become one of the greatest unifying or disruptive factors for the university, and therefore it is specifically mentioned next to the incorporated colleges in the terms of reference to the royal commission of 1909.

The commission in its report recommends that the Imperial College be made a constituent college of the university, and the establishment of a self-governing faculty of technology, with representatives from the different colleges, as well as of experts outside the colleges.² Sir Alfred Keogh, rector of the Imperial College, commented favorably upon the report. It gave to the masters of industry a direct voice in the education of scientific men. It imposed upon the university the duty of developing science in relation to industry. It would compensate the Imperial College for giving up the idea of becoming a great "technical university" by the

¹ The capital value of the lands and buildings available for the college is estimated to exceed five million dollars.

² CL. Ch. XIV, "Applied Science and Professional Education."

establishment of their principles and the extension of their influence within a future single multi-college university in a city of 7,000,000 inhabitants, and thus make the largest university in the world.¹

THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE.

The London School of Economics and Political Science, although one of the newest schools in the university, has had such a rapid development that the royal commission has recommended that it be among the first "constituent colleges" in the reconstituted university. It is incorporated as a company, limited by guarantee, and without power of taking profits. The members of the corporation, limited to the total number of 100, constitute the court of governors and administer the school through a council of management numbering 20 members. The head of the school is a director in whom very large powers have been vested. To this fact "the smooth working and progress of the school are largely due."² The regular staff of lecturers at the school serve on the "professorial council," under the presidency of the director, in order to advise the governors on any matters connected with the school curriculum and students.

The school was purposely not given a fixed and inelastic constitution in order that it might keep in close touch with the needs of the professional and business classes and be able easily to adjust itself to the changing conditions of the University of London. In this manner the small committee formed in 1894 has grown into the present court of governors, and the school opened in 1895 was admitted as a school of the university in 1900. The origin and progress of the school are due to the response to a long-felt need vigorously voiced in 1894. The Gresham University commissioners in that year pointed out "the imperative and urgent need for supplying to the students in the London University" the kind of education provided in France by the *École Libre des Sciences Politiques*. The same year a committee of the economic science and statistics section of the British Association reported that they "could not but regard the condition of economic studies at the universities and colleges as unsatisfactory. As contrasted with continental countries and also with the United States, the United Kingdom possesses no regular system." In the absence of any system of commercial education of a university type, the founders planned for—

a system of higher education which stands in the same relation to the life and calling of the manufacturer, the merchant, and other men of business as the

¹ Sir A. Keogh's inaugural address as president of the Association of Technical Institutions. The Times, London, Jan. 31, 1914.

² Report to the senate on the organization and administration of the schools of the university with reference to the London School of Economics and Political Science, Jan., 1914, p. 4.

medical schools of the universities to that of the doctor; a system, that is, which provides a scientific training in the structure and organization of modern history and commerce and the general causes and criteria of prosperity as they are illustrated and explained in the policy and experience of the British Empire and foreign countries.

It is a school of the university in the faculty of economics only, but certain courses of lectures are recognized in the faculties of arts, laws, and science. The work of the school extends over political science (including commerce and industry). In addition to these departments, several special branches of instruction have sprung up. There is a course of lectures in administrative subjects to equip officers for the higher appointments on the administrative staff of the Army and for the charge of departmental services. The officers are selected for the purpose by the War Office. Special lectures have been added in order to provide the teaching required by candidates for the degree of B. Sc. in the faculty of economics and political science with honors in *Transport*. These lectures are also attended by some 400 students drawn from the staffs of the great railway companies. In connection with the extensive library, lectures have been added in the subject of librarianship. The method of utilizing the British Museum, the public record office, and other collections is explained, and brief bibliographies are supplied and opportunities afforded for the source method of the study of history. The breadth of the school, both on the lower practical and the higher research side, is displayed by the addition to the staff of lecturers of British and foreign economists and professors, who supplement the courses at the school with short courses on their subjects. Lectures by distinguished men engaged in public life or administration are also secured. Besides the matriculants of the University of London, for whom courses are given leading to degrees, the school is open to those who have not matriculated and do not wish to pursue a full university course. The nonmatriculants are young bankers, accountants, railway administrators, business men, social workers, civil servants, municipal officials, journalists and librarians, candidates for the consular service, factory inspectorships, and board of trade appointments.

The world fame of the school rests upon its facilities for investigation and research. It has 29 research studentships. The greatest attraction for the research student is its library of some 300,000 items, confined to the school's field of study, and unique in the world. It seeks to have a complete collection of governmental publications and official reports of all civilized countries. The Congressional Library of the United States has made it a library of deposit for congressional documents in London, and various departments of American States have done the same. Its collection of

municipal documents, presented by more than 300 municipalities throughout the world, is unequalled in any other country. It is also unique in its special collection made by experts of material illustrating particular subjects, like trades-unionism, transportation, and socialism. The proximity of one of the greatest libraries in the world in the British Museum is another advantage of the school. Research is encouraged by individual supervision of students and by seminars. Original work is furthered, for example, under the auspices of the committee of the advanced historical teaching fund by lectures on "sources" and the compilation of classified lists. Another stimulus to advanced work is the publication by the school of "Studies in Economics and Political Science."

We can now understand why professors and teachers from universities in many lands, especially from Germany and the United States, have resorted from time to time to this modestly housed school in a corner of Clare Market, and why it was next to the largest in the number of graduate students among the institutions of the Empire in 1913.¹ The school is continuing its rapid development. A school of sociology and social economics which had been carried on by itself for nine years was merged in the school of economics and political science in 1912. In 1912-13 a chair of ethnology was created in the University of London, tenable in the school of economics. This fulfills a wish of the Haldane commission that a department of ethnology should be established as a necessary adjunct to the school of oriental studies, it being almost as important that officials in parts of the Empire inhabited by non-European races should have a knowledge of their racial characteristics as that they should be acquainted with their speech. One of the latest developments is the arrangement of the school with University and King's Colleges for inter-collegiate courses in subjects of imperial interest.

If the recommendations of the Haldane commission were carried out to make the school of economics the only constituent college in the faculty of economics with an adequate enlargement of its funds, staff, buildings, and equipment, and with the removal to it of the 40,000 books and tracts of the unparalleled Goldsmiths' Library of Economic Literature, it would certainly be the world's model institution of the kind. It could hardly be surpassed, having in addition to its full university connection and libraries all London as a laboratory for its practical work. It certainly makes it clear that at least every great urban university should have some school of the kind.

¹ Members of the teaching staff of the following universities in the United States have attended the school: Bryn Mawr, California, Chicago, Columbia, Cornell, Dartmouth, Harvard, Illinois, Johns Hopkins, Nebraska, New York, Ohio, Pennsylvania, Princeton, Radcliffe, Leland Stanford, Syracuse, Washington, Wisconsin, Yale. Of the 304 graduate students (1912-13) of the school, there were, from Oxford, 88; Cambridge, 84; London, 148; Scotland, 10; Ireland, 9; Wales, 18. These 304 students constitute nearly 15 per cent of the total attendance.

A GROUP OF INSTITUTIONS BELONGING TO THE UNIVERSITY.

1. Brown Animal Sanatory Institution. 2. Physiological Laboratory.
3. Francis Galton Laboratory for National Eugenics. 4. Goldsmiths' College.

1. *The Brown Animal Sanatory Institution* was the only department connected with research possessed by the old examining University of London. It was established in 1871, through the first noteworthy bequest to the university, made in 1852. Up to 1900, during the 64 years' existence of the university as a mere examining body, it was the great exception for it to receive a gift. By the terms of the bequest it was to be "an institution for investigating, studying, and, without charge beyond immediate expenses, endeavoring to cure maladies, distempers, and injuries any quadrupeds or birds useful to man may be found subject to." The institution has proved true the declaration of the master of the rolls "that this is a good charity, a gift peculiarly connected with what is useful, and for the advantage of mankind." The hospital from the beginning to 1913 has treated a total number of about 169,000 patients, the great majority of which were horses, dogs, and cats. About 6,000 patients are now treated annually. Incidentally, the institution became a fountainhead of postgraduate study and research in the university. In the laboratory researches tending to throw light on the diseases of animals are conducted systematically, and a long line of distinguished workers in pathology and physiology have availed themselves of the opportunities of the laboratories. Provisions are made for the admission of clinical students to the hospital and research students to the laboratory. Valuable investigations are carried out for public bodies and governmental departments. The university commission recommends that the institution and the Royal Veterinary College¹ be brought into close proximity in a central site, and into cooperation under the educational and financial control of the university. This would be a confirmation of the recent general recognition of the importance of university training in veterinary science and research.

2. *The Physiological Laboratory*, established by the senate of the university in 1902, is one of the first fruits of the reconstituted university and of the stream of private gifts stimulated by the appearance of a concrete teaching and research institution in place of an abstract examining body. It has been said to be the "only example in London" of an institute devoted solely to research. The external side of the university has the declared policy of making it the first example of a series of special institutes. The university commis-

¹ Founded in 1791 by a private union, recognised as the Royal Veterinary College in 1875, and having "recognised teachers" after the reconstitution of the university.

sion on the other hand argue that special research institutes should not be maintained out of university funds, although there may be room for independent research institutes in great cities like London. They recommend the development of one great department of physiology in a constituent college, which in this case would be University College, with its new building for the institutes of physiology and of pharmacology and of anatomy. The statement of the purposes for which the laboratory was established reads as follows:

1. To afford to the lecturers of the University of London and other duly accredited physiologists a place in which the results of current research can be presented by lectures and by demonstrations.

2. To provide for advanced students of physiology opportunity for the prosecution of research.

The blending in the statement of the work of teaching with research would seem to differentiate the physiological laboratory from independent trusts purely for the advancement of knowledge like the Carnegie Institution of Washington. The sound doctrine of the statement and the successful work of the laboratory have given a needed impulse to research in the University of London and may afford an example to other universities.¹

3. *The Francis Galton Laboratory for National Eugenics*, founded in 1904, by gift, forms, with the Drapers' Company Biometric Laboratory, another benefaction, a department of applied statistics. The department, one of the first of the kind in the world, is a research department "for the study of those agencies under social control that may improve or impair the racial qualities of future generations, either physically or mentally." In addition to the work of its laboratories, the department collects statistical material bearing on its subjects and seeks to extend the knowledge of eugenics by professional instruction, publications, public lectures, and experimental or observational work. By an appeal to the public and the generosity of a donor, a building with proper equipment is just being completed for this department at University College. This will fulfill a recommendation of the royal commission to keep departments primarily for research "in close touch with and proximity to one of the university teaching centers." This is the latest act enforcing the considered policy of not separating research institutes from teaching institutions or segregating a graduate faculty from other faculties.

4. *Goldsmiths' College* is another gift to the reconstituted university. The Worshipful Company of Goldsmiths founded it in 1891 as the Goldsmiths' Company's Technical and Recreative Institute. The extensive buildings and grounds were presented to the university in 1904. The college is managed by a delegacy appointed

¹ Cf. Ch. XV, "Advanced Study and Research, etc."

annually by the senate and consisting of 18 members representing the senate, the Goldsmiths' company, and the county councils contributing to its support. There are five departments in the college—teachers' training, science, engineering, building, and art. The first and last departments only carry on day work. The training college is the largest in the country, but its work is not ordinarily to extend beyond the standard of the pass degree. It was originally intended to give only a two years' course to those who had passed the matriculation or an equivalent entrance test. In view of the size and location of the day training college, the royal commission recommended that it should be continued for elementary school teachers and also the school of art. The commission enunciated the principle that "a great university may quite properly endeavor to show how elementary school teachers can best be prepared for their profession on the basis of a good general education by instruction which, though of university standard, does not involve the expenditure of time and the strain which a full course for a university degree entails."

In this connection the London day training college comes into view. It was founded in 1902 under the auspices of the London County Council, and admitted, in 1909, as a school of the university in the faculty of arts in pedagogy. It is a fine example of a strictly professional or normal school only, doing work preparing for the teaching profession. Under the regulations of the board of education, it trains teachers for the elementary and secondary schools and also admits other advanced students and those preparing for the university higher diploma in pedagogy. The latter are advanced students and those making a special study of some branch of educational method, history, or organization. Undergraduates of the University of London must have passed the matriculation examination or an equivalent and be "four year students." Graduates of a university or persons with equivalent qualifications may become "one-year students." Postgraduate students devoting their whole time to the work of the college during the year of training receive instruction in the theory, history, and practice of education in preparation for the teacher's diploma of the university. Well-equipped London secondary schools are used for practical instruction, in addition to the two demonstration schools attached to the college.

The course of instruction in the college is limited to the normal-school courses in the theory and practice of education and classes in nature study, clay modeling, drawing, music, physical training, handicraft instruction, and needlework. Undergraduates taking a four years' course to satisfy the requirements of the board of educa-

tion and those of the university for bachelors' degrees attend at other colleges of the university for their degree courses.¹ The royal commission recommend the elevation of the training college from a "school of the university" to become the "university department of education," with the possible representation of the county council in the government of the school, and the preservation of the privileges of the students within the tax-paying area. The principles recognized and the governmental arrangements proposed throw light on the difficult problem of coordinating colleges, normal schools, and universities in the United States.

A cursory survey of the university, beginning at its center, and of the institutions belonging to it, does not need for the present purposes to cover the numerous institutions in the outer circles of the university, grouped as "schools of the university" and "institutions having recognized teachers."² Enough has been said to show the characteristic features of a modern urban university and the principal lessons it has to teach. It is more than a storehouse of knowledge accumulated in the past. It is a central power house connected with all the substations in which are generating the varied forces of our complex civilization. Responsive to every demand of society, it records and, in turn, endeavors to direct all great social movements. What an imprint of the nineteenth century, and after, is the University of London! The European revolution of the latter part of the eighteenth century, developing in France in a political revolution and in England resulting in a literary and religious revolution, in no small degree originates the university. It breathes the spirit that brought forth the reform bill of 1832, which was also the period of the birth of the university. It bears the mark in the time of the introduction of the newer studies and of its various organizations of each successive important movement in thought and society. Our review has already pointed out a number of the coincidences of the development of the university's activities in connection with those of the times.

The advance in the material sciences in the early part of the nineteenth century, as well as of certain social and political philosophies, was immediately recognized in the curriculum. The age of steam and the railroad caused applied science to follow pure science. The exhibition of 1851 turned attention to fine arts and a wider application of the sciences. The increasing predominance of the industrial age, with the progress of invention and the competition of Germany, multiplied technical institutions. Renewed attention to the social, economic, and political sciences followed in the wake of the social era succeeding the industrial age, toward the end of the nineteenth

¹ Cf. Ch. XIV, "Applied Science and Professional Education," pp. 211-212. ² Cf. Table 6.

century. The heralding of the advent of a national system of education by the parliamentary educational acts from 1870 on is reflected by the planting of training schools and the university's provision for teaching as a profession. The admission of women to degrees in 1878 and university coeducation are among the first successes of the woman's movement. Greater London realized by the constitution of the London County Council in 1888 hastened the reconstitution of the university with "the main purpose of strengthening the ties between the university and the institutions engaged in higher education within the appointed radius of 30 miles." The national propaganda of imperialism, especially after the Boer War, led to the advance of the spirit of imperialism *pari passu* with the municipal spirit within the university. The holding of university examinations throughout the Empire had prepared the way for this. It has recently reached the point of the arrangement of intercollegiate lectures upon imperial subjects. The strength of these two developments has so impressed some of the parties now discussing university reforms that they deal with it as a twofold institution—municipal and imperial.

The features attributed to a modern or civic university and aimed at by the University of London are summed up in common parlance by the phrase, the democratization of education. This includes much more than widening the range of subjects taught and attempting to put the modern disciplines upon an equality with the ancient ones. It calls for a university government upon a widely representative basis, including the classes and interests involved, and even the beneficiaries in the form of the student and graduate bodies, known as the "students representative council and convocation."¹ The University of London has followed the principle to such lengths that the complaint is common concerning the cumbersomeness of legislation and the inefficiency in the executive with a senate of 56 members. The essence of freedom in the *lehrfreiheit* and *lernfreiheit* of the ancient universities is extended in practice in London as a modern university in the abolition of distinctions on account of race, of religion, of politics, of class, or of sex. Further extension of freedom is loudly called for to allow the teacher to make his own syllabus and set his own examinations and to give the student opportunity to be judged by his whole record instead of by one or two formal examinations. This would be to attain the freedom of an American university.

A note of the civic university has been the intermingling of general, professional, and technical education. This has been carried to such an extent in London, in part due to the ramification of the university through institutions of all kinds, that it is asserted there is a tendency to a looseness of educational standard and a loss of university ideals.

¹ Cf. Ch. IX, "Organisation and Administration of Universities," p. 159.

The University of London announced at the beginning, what almost of necessity has become a sign of a civic university, the reduction to a minimum of the cost of education to the student, approximating a free education. Over against this, the laboratory methods of instruction insisted upon in these institutions greatly increased the cost of teaching. The natural outcome is that State aid for the scale of expenditure adopted is a necessity, and private benevolence must also be increased. State aid as a chief means of support has intensified in the civic university the sense of obligation belonging to all universities to serve the State.¹ For this purpose, specialized courses and schools have been organized, investigations and research undertaken within the college walls, and extramural activities to serve the public promoted in various forms of university extension. The University of London brings out the characteristic features of a civic university on a magnificent scale. Since its reorganization in 1900 it has become the greatest aggregation on earth of State, municipal, church, and private "not-conducted-for-profit" foundations. An American university president referred to it as the *disjecta membra* of a giant, and in consequence weak and powerless. If he had studied deeper, he would have alluded to the *disjecta membra* as gathered in superabundance and united by ligaments, and in some cases by wires, and only lacking, with some sloughing off, a unifying and vivifying nervous system to make a veritable giant in strength and power.

To accomplish this was the aim of the royal commission appointed in 1909 and reporting in 1913,² after four years of gathering of evidence from scores of eminent authorities. In addition, the commission held 72 sittings for deliberation. The reconstitution of the university in 1900 was a half-way measure based upon compromise. It gave a great impetus to the growth of the university, but soon the operation of the new constitution made its defects apparent. By 1908 the university senate petitioned for another royal commission, especially to consider the relations of the university and the Imperial College of Science and Technology. The amalgamation in the latter institution in 1907 as a result of another royal commission of important scientific colleges made it appear as a nucleus of a possible second university, and the apex of technological instruction in the Kingdom. The threatened development of expensive duplications and the schism in the field of education precipitated the petition of the senate. The jealousies of the smaller institutions against the larger, aroused by the pending incorporation into the university of University and King's Colleges, accentuated the difficulties between the external and internal sides of the university.

¹ Cf. Ch. XII, "State Aid and Visitation."

² Royal commission on university education in London, Lord Haldane, chairman, code 6719.

In short, the progress of the university in the first decade of the twentieth century made London and the Empire conscious of the university. It was ready for a new stage of development, in which it should avail itself of the many valuable experiments it had made.

The review of these experiments and an extensive study of present-day university problems, inspired by the high purpose of recommending principles and plans for inaugurating the fourth and possibly permanent stage of the university, in the final report of the commissioners deserve to be summarized and commented upon. Under the heading, "The Essentials of University Education," the report lays down five principles susceptible of universal application. The first is "that students should work in constant association with their fellow students, of their own and other faculties, in close contact with their teachers; and that they should pursue their work when young and able to devote their whole time to it." At the beginning this revives the ideal of the ancient universities, in danger of being lost in the modern, of a community of youthful students and teachers wholly devoted to learning, and favors if possible a residential and tutorial system. The second essential is that "in the university, knowledge is pursued not only for the sake of information, but always with reference to the attainment of truth."

This differentiates university work in its nature and aim from that of a secondary school in which definite tasks are prescribed, and pupils with plastic minds are mentally and morally trained by the orderly exercise of all their activities; also from that of the technical or professional schools in which theoretical teaching is largely directed by the application of ascertained facts to practical purposes.

This sets up as a standard of admission to a university college the completing of a secondary school course and recognizes the touch of liberal education in a university. Thirdly, it is asserted that "there should be close association of undergraduates and postgraduate work." It will surprise many Americans that this point is elevated into an essential, but it represents almost a universal Old World practice.¹ "A superuniversity" is an American development repugnant to European notions. Fourthly, "special research institutes should not form part of the university organization." It is contended that the recent continental establishment of independent research institutes is in the experimental stage, and is intended to undertake work in branches of knowledge outside the ordinary scope of a university, and to pursue longer and more elaborate investigations than the time of university students and teachers would permit. The Carnegie Institution, of Washington, is mentioned as an independent trust for the advancement of knowledge having no

¹ Cf. Ch. XV, "Advanced Study and Research without Graduate Schools," pp. 218-219.

relation to the university problem. Fifthly, "the establishment of a university press under full university control is an essential function of the university." Sixthly, "technological instruction should be included among the functions of a university, but it should not be of a narrow utilitarian kind. From the practical point of view of industrial progress the university treatment of technology as based upon a thorough grounding in pure science is of the highest value and importance."

In the preceding sentence the commission run a line of demarcation between university technological instruction and that for strictly trade purposes carried on in polytechnics and trade schools. The principle is given which might well be applied in the coordination of professional or higher engineering as taught in the university, and mechanic arts as taught in the college of agriculture and mechanic arts.¹

Seventhly, "a degree should signify that a university education has been received." This involves some form of tests or examinations.² While the report regards the granting of degrees as one of the chief characteristics of a university, it safeguards against the view that the giving and taking of degrees is the real end of the university's existence. A pronouncement revolutionary and counter to English practice is made against external examinations and the award of degrees upon examination alone.³

The report adds other things which, though not essential to the nature of a university, are desirable in a city university. For example, the urban university "should offer as good education to its evening as to its day students." It should provide locally for university extension. In particular, it should maintain a special center for work done in conjunction with the Workers' Education Association.⁴

The report enumerates seven conditions necessary for the realization of the foregoing aims.

1. The basis of university work must be a preparatory "general education in a wide range of study, giving the power of accurate expression and orderly thought, together with moral training." Several inferences follow, extremely suggestive for colleges in the United States. Secondary school work should be completed before entering college; though, owing to the increased number of departments of study, the college may teach the elements of some subsidiary subjects. The secondary school is the primary place for a general education. Specialization in schools is desirable after the age of 16. It would then be well for pupils to remain in school for two additional years, intending university students making some definite preparation for

¹ Cf. Ch. XIV, "Applied Science and Professional Education, p. 205, *passim*.

² Cf. Ch. XVI, "Examinations," p. 223.

³ Cf. Ch. XIX, "University Extension Teaching," p. 252.

the faculty they propose to enter. Herein certainly room is made for the American junior college. The opinion is advanced, still startling to many in the United States, that any sound general education should be sufficient to secure admission to college and that a school-leaving certificate as in Scotland (and we may add in the Western States) in lieu of an entrance examination should be accepted.

2. "Homogeneity of university classes" is requisite. Students must not be combined in the same classes unless they are qualified to work together by having met equivalent standards for admission as candidates for degrees.

3. "A university quarter" is advocated in the interests of economy and efficiency and to make visible to the public a great seat of learning. The first essential of corporate life in a university and the felt disadvantages of the present wide dispersal of university institutions in London call for a policy of centralization.

4. The establishment of residential hostels and the promotion of university societies and their accommodation in central university buildings are sequels to the fundamental fraternal idea of a university.¹

5. The creation of a proper university professoriate requires that the university appoint, pay, pension, and dismiss its teachers.² This is proved by the inadequate results of the experiment of the University of London in dividing the responsibility for the selection of teachers with other bodies.

6. "The teachers should, under certain safeguards, have control of the education and examinations of their students." It is hard for an American professor to appreciate the force of this recommendation, since he makes the syllabus of his own courses and sets his own examinations. In London the teacher is bound by a hard and fast syllabus largely made by others and submits his students to external examiners.

7. "The university must have complete financial control of all the institutions within it. This control should be vested in a small council or senate, acting as the supreme executive body of the university." This condition is a great keynote of the report, scarcely second to the keynote struck in the first essential of any university, namely, that of a corporate life of students and teachers. While the condition is a sound one for any university, it is a necessity for the coordination of institutions in London, and may well be applied in the coordination of institutions in different localities in American States.³

¹ Cf. Ch. XVIII, "Student Life," pp. 244-245.

² Cf. Ch. XI, "Provisions for the Faculty."

³ Cf. Ch. XIII, "Coordination of Institutions."

The essentials of a university and the conditions necessary for the realization of them require fundamental changes in the constitution of the university.¹ The report proposes a less cumbersome and more centralized and at the same time widely representative government than the present one. It would differentiate legislative and executive functions, educational and financial administration, and coordinate them by advisory bodies. The report would substitute for the existing senate² of 56 members representing various interests two bodies, the court, a widely representative body consisting of about 200 members, which would include a minority representation of the teachers and of the graduates, and a majority of distinguished laymen appointed by outside governmental and professional bodies concerned.* This would be the supreme governing body of the university, and it alone would have legislative functions. The small senate of 15 members, including the chancellor, the vice chancellor, the chairman of convocation, and 2 representatives of the teachers, would be the executive body, with full financial power. It would have full powers as to educational policies, except for the reservation to the faculties of statutory control over courses of study, examinations, and qualifications for degrees, etc. It would have the power of appointment of university officers and teachers, and of administrative business generally. It is contemplated that a majority of the senate will be prominent laymen and business experts, 5 appointed by the Crown, 2 by the court, 2 by the London County Council, and 1 by the corporation of the city of London for terms of years.

The report proposes that but one of the three existing standing committees should survive, namely, the academic council; the council for external students and the university extension board being dropped in the interests of unification. The new academic council would consist of the vice chancellor as chairman, the deans of the faculties, 8 members of the faculties elected by the faculties in common session, and 1 teacher appointed by the senate to represent each group of studies in respect of which schools of the university have been recognized, but for which no faculty has been constituted. The academic council would be a small body in the first instance of 16 members, including at least 1 member of each of the faculties, but not constituted on the basis of proportional representation. The functions of the council would be mainly advisory, to insure that the senate should have before it the opinion of the professoriate upon educational questions affecting the university as a whole. Executive functions as regards educational matters might be delegated to the council by the senate. The report mentions a—

committee for technology, an executive committee of the senate intrusted with the administration of all matters connected with the faculty of technology, ex-

¹ Cf. Ch. IX, "Organization and Administration of Universities," pp. 159-169.

² Cf. p. 70.

cepting finance and the appointment of professors and readers, in respect of which its powers would be advisory.

It is easy to infer that this committee is proposed as a matter of expediency for the time being, as it is not logically, like the first three bodies, a consistent part of the proposed governmental scheme. Strong objection has been made to this item of the report by friends of the report.

The convocation would be continued substantially as it exists. It would elect the chancellor for life and the chairman of convocation (who would be members both of the court and the senate), as well as 20 members of the court. The proposed discontinuance of the council for external students leaves the convocation without an organized representation of the external side of the university among the governing bodies. This is believed to be the cause of a large part of the agitation against the report. The majority of the convocation having been external students looks with suspicion upon the shifting of the center of gravity of the university from the external to the internal side.

The report would continue the students' representative council, giving it power to appoint two representatives on the court, in addition to the right of access to the university authorities by petition.

THE ORGANIZATION OF THE UNIVERSITY.

Strictly speaking, the convocation, the students' representative council, and the faculties do not belong to the government of the university, but represent its threefold constituency, graduates, students, and teachers, of which from the nature of the case the teachers are the chief body. Accordingly a striking part of the report is the emphasis laid upon the faculties as the basis of university organization. The report reads:

The faculty should consist either wholly or in the main of the university professors (including honorary and associate professors) of the subjects comprised within the faculty; of the university readers (including honorary and associate readers) in subjects for which the university has not provided professorships; and of such other teachers and officers appointed by the university as the faculty may co-opt. The vice chancellor should be a member *ex officio* of every faculty. A faculty is not confined to a single institution, but embraces properly qualified teachers of subjects who have been appointed by the university.

The report proposes the organization of departments as the units in the faculty. It says:

In the same way as the faculty, which consists of the principal teachers of the group of subjects comprised within it, is thought of as extending beyond the lines of individual constituent colleges, so the several subjects within the faculty should be organized into departments, which may, if necessary, extend

beyond an individual college. Any two colleges between which a department is divided should be in such proximity as to allow of effective supervision by a single head.

One can not fail to note the skill with which the commission makes the faculties a fundamental factor toward the unification of the university.

Under the powers of faculties the report treats "professorial examinations," a reform previously referred to.

The head of each department, and under his direction the other teachers in his department, will be the examiners in the department, but in the public examinations one or two assessors appointed by the faculty will be conjoined with him.

To safeguard the standard of a degree amidst the varying examinations allowed, the report, in addition to the provisions for standards of admission and instruction, provides that—

the faculties shall be assured by reports from boards of studies that the range of study in a subject as treated by different teachers shall broadly be the same, and from its assessors that the standard of the examinations and other tests shall broadly be the same.

Turning from the instructional to the institutional organization of the university, the report recommends the establishment of constituent colleges and university departments.

The constituent colleges will be educational institutions which are either established by the university or which are strong enough in one or more faculties to comply with the conditions for incorporation, and which transfer to the university the financial and educational control of their work in one or more of those faculties.

No institution shall be considered strong enough to become a constituent college in any faculty unless it is able to provide a full course for the first and higher degrees awarded in that faculty. Each constituent college will be managed by a delegacy similar to those already appointed for University and King's Colleges. The university departments will be departments dealing with a single subject of study, or with a group of studies of less range than a faculty, whether established by the university or placed under its financial and educational control.

Each university department will be managed by a delegacy similar to those already appointed for University and King's Colleges. Constituent colleges and university departments will have a departmental organization according to subjects of study.

The summary of the report up to this point will enable one to catch the scheme of the commission. The nucleus of the university is the coordination of faculties and of "constituent colleges" and of "university departments" through a central administration and financial control, reenforced by a central site for buildings to accommodate the administration, and certain institutions alike in kind. Outside the site of the "university quarter" to be built, it would be expected to strengthen university centers in connection with existing

institutions for specific purposes and to concentrate the area of the university for "constituent colleges" and "university departments" within the administrative county of London.

Bloomsbury, the seat of University College and of the British Museum, is recommended by the commission as the most suitable place in which "to create a university quarter, which would probably do more than anything else to convince the London public that the university was a reality." The Imperial College of Science, surrounded by the scientific collections of the Government at South Kensington, would remain undisturbed, according to the report. This recommendation has proved no exception to the rule that discussions are apt to rage about sites, local interests being involved. If an impartial jury of scholars from abroad were impaneled to decide the case, it is altogether likely that they would sustain the report in this matter.

The report in theory, having established a unified central teaching university, faces the problem how best to link up with the university, without lowering its standard, the remaining provision for higher education in London and the home counties. The answer is to continue the present regulations and make them more strict for recognizing schools of the university. These would be reckoned as independent university centers which would in time become constituent colleges if within the administrative county of London, or parts of a new university for southeast England if outside that area.

When institutions are not devoted exclusively or almost exclusively to university work, groups of departments in university work may be recognized as schools. This recognition of schools in "mixed" institutions should be limited to those which may ultimately become independent university centers. To insure the application of the principles of the report the following new conditions are to be imposed upon the schools of the university: The university should be represented on the governing board of each school. The principal teachers should form an advisory board on academic matters. The university should have some voice in the appointment of teachers, and the title of "professor" or "reader," except in theological schools, is to be conferred only by the university.

The additional conditions for the recognition of schools in "mixed" institutions give the university a power to require the coordination of the work of the center with the work elsewhere, to satisfy itself that the staffing and laboratories are adequate, and that there is a group of qualified teachers fitted to give instruction covering all the subjects of a degree course in some one faculty. These conditions lead to the conclusion that the present system of recognizing teachers in institutions otherwise unconnected with the university should

cease, and that as a rule polytechnics should not attempt to become schools of the university. These logical conclusions have been naturally a source of opposition to the report. The proposed abandonment of the interesting experiment of the university recognition of individual teachers, an experiment which has been received with favor in some quarters in the United States, should be especially noted. The practice is an outcome of extreme individualism, as over against the cooperative and institutional ideas of the present.

Consistent with the doctrine of exalting the professoriate within the university, the report urges that the principal teachers in the "schools" should be grouped with reference to the faculties to which their subjects of study belong, but should not unless appointed by the university be members of the university faculties. These groups of teachers should constitute boards of studies in their respective faculties. These boards, with the assistance of committees they might appoint under the approval of the senate, would prepare the curricula and syllabuses of the courses for degrees. The continuance is urged of the present practice of the inclusion on the committees of "other persons" who are not teachers in the "schools."

It is noteworthy that the commission approves of the experiment of connecting in the faculty councils of the university, professors with practitioners, the theoretical expert in the university with the prominent expert in the professions, sciences, and arts at work in the outside world.

The commission approached the subject of external degrees as one "which has aroused in the past the most acute and bitter controversy." They look forward to the time when the demand for them will decrease or disappear with the multiplication and accessibility of universities, and with the "better understanding of the value of a university training." They conclude since the University of London was their originator that external degrees must be retained for the present. External students should be known as "unattached." External candidates, however, are to be excluded from examinations in medicine and engineering, as these subjects require in practice something more than a mere test of knowledge afforded by an examination.

The pronouncement of the commission on external degrees after the many years of experience in the University of London should stay the tendency in the United States on the part of some institutions to grant degrees for what they call university extension work. They may acknowledge the value of proper correspondence schools and their certificates for certain persons and purposes, but they should teach the public the sharp distinction between this external work and certificates and the college training and degrees.

Pursuing their policy of concentration, the commission would end the practice of holding examinations for degrees of the university in the colonies. This practice discourages the establishment of teaching universities in those countries and imposes curricula planned for the needs of students at home, instead of those for the needs of candidates in the colonies. The university having been a model on which universities had been founded in India, in South Africa, and in New Zealand, in reforming itself wishes to set an example for them to substitute teaching for examining universities. It is intended that the university shall fulfill imperial functions of more real value than handing out syllabuses, examination papers, and degrees in distant countries. It is hoped that the university will be a center to which students from the whole Empire will come in larger numbers. The university at the capital of the Empire, in close touch with the colonial office and the board of education, could help colonial governments with its advice and by the issuance of certificates which might be accepted in lieu of the tests required of English students.

No space can be given here to the application of the principles of the report elaborated by the commission in the proposed treatment and reorganization of the faculties. The report labors patiently and judiciously to set up models which may be generally and gradually adopted, giving time for the many vested interests to adjust themselves to the changes. The main lesson of this section of the report teaches legislators in the United States, who are coordinating and reorganizing educational institutions, to act upon the advice of educators and to effect reforms by evolution instead of by revolution. Incidentally the American systems and standards of university, legal, and medical education recently established are confirmed.

The report estimates that an additional income of not less than \$495,000 a year will be needed to inaugurate the reforms proposed, and evidently expects the Government to provide that sum. The commissioners believe that the unlimited possibilities of the reformed university will so appeal to the liberality of the private benefactor that he will, in the future even more than in the past, supplement the public contributions from imperial and local funds by the gift of buildings and endowments. English experience has shown that the way to secure the coordination of independent institutions is to give them Government grants.¹ The commission seek, beyond the coordination of the institutions, their stimulation by enlarged support to pay higher salaries and to raise their standards and ideals. While giving precedence to these aims they do not forget the need for the reduction of the fees of the students and

¹ Cf. Ch. XII, "State Aid and Visitation."

of the cost of duplication in the institutions. The Americans legislating for the coordination of their State institutions might well catch the spirit and wisdom of the royal commissioners and put the motive of the improvement and efficiency of their institutions above that of economy.

In the autumn of 1913 the Government appointed a departmental committee to prepare a bill for an act of Parliament based upon the recommendations of the commissioners. During 1914 the committee invited and received representations from the institutions and parties concerned, and before the outbreak of the war it was hoped that a bill might be passed before the expiration of the present Parliament. Now a long delay is inevitable.

This chapter on the University of London and the report of the royal commission make patent three general suggestions:

1. While no one could desire to repeat anywhere the position of things in London, a great urban university and institutions near it should feel an obligation by conferences, mutual recognition, and "intercollegiate lectures" to link up and promote higher education within an area of a given radius. President Lowell pointed out, at the time of his inauguration, what economy, efficiency, and consciousness of power could be obtained by the association or affiliation under the ægis of Harvard of the institutions of higher learning within rapid-transit distance of Boston. Yale might propose something similar for Connecticut. Other prominent universities having naturally extended areas by means of interurbans and rail-ways could effect the same thing.

2. Following the example of London, as practically a State university, grouping about it independently endowed, and even church institutions, as well as sister State institutions, State universities by similar means ought to find a way to be centers for the coordination of State institutions and of cooperation with independent colleges.

3. London, in its aspects as an imperial university, may throw light upon the question of a University of the United States, precipitated by George Washington and his bequest for the purpose. Though London was the latest among the great capitals to have a university, it has made it plain that a capital is naturally more than a political center. Governmental activities necessitate, especially in modern times, the gathering there of experts in all the arts, sciences, and professions, and the equipment they need in libraries, laboratories, and collections. Officials and citizens constantly going to and fro from the capital to the utmost bounds of a country find in the capital a unifying influence and spread it broadcast. The political forces need the touch at the capital of

an organized university that intellectual and spiritual elements may be brought to bear upon them and be radiated with them throughout the life of the Nation. The report of the commissioners intimates that the imperial university is in London not only because of the advantages to a university of the material there but because the Government needs at its own doors a university to serve it and to propagate the national life throughout the Empire. Every true university, whether it be with or without State aid, is truly national and international. The British Government now renders aid to every university and almost every university college in Great Britain and Ireland, and they are in a high sense national, but they are not governmental and imperial like London.

A university at the capital of the Government, by the Government, for the Government, in virtue of its being a university, is more than a Government department. It must have the virtues and freedom of the sisterhood of universities. It has in addition a governmental mission which in no wise derogates from other universities. From its situation it supplements them, and in the long run must bring a reaction in their favor. The University of London is not a competitor in its imperial aspects of the other British universities, but a variation of type to suit the capital in which it is. Not only London but the other world's capitals teach that there should be a Federal university at Washington. London also teaches how a government by progressive appropriations may gradually grow a university out of heterogeneous institutions at hand.¹

¹ The following authorities have been used in this chapter: Calendars, 1913-14; annual reports of the heads of the institutions; board of education reports (1912-13) from universities and university colleges in receipt of grant from the board (code 7615); royal commission on university education in London, final report, 1918 (code 6717), appendix (code 6718); *The Times Edu. Supplement*, Jan. 5, 1915; articles and communications in public press and reviews, 1913-14, e. g., *The Lancet* weekly articles from Apr. 26, 1913; *British Medical Journal*, May 17, 1913, and personal interviews.

Chapter IV.

THE NEW OR PROVINCIAL UNIVERSITIES.¹

Manchester (Victoria), Birmingham, Liverpool, Leeds, Sheffield, Bristol.

The new or provincial universities, says a writer—

present a composite picture in which progress and poverty are the prevailing hues * * * Not since the monastic revival of the twelfth century or the scholastic revolution of the sixteenth has England known an educational movement so rich in romance, in courage, in devotion, and in promise. The dreamer has dreamed, the founder has given land and gold, the public have subscribed, civic pride has been stirred, and the cry and need for knowledge have justified them all * * * They have heretofore devoted their efforts to the tasks of proving themselves necessary to the community, and worthy of public and private support.²

This they have clearly succeeded in doing in the first decade and a half of the twentieth century. They might well be named twentieth century universities, in which century they have all taken their present form. A variety of baptismal names has been proposed which may in part reveal their character. Observers at a distance and those within the centers yielding to or flattering local pride have described them as municipal universities. But the leaders in them know the incongruity in the name. From its nature a university transcends the limitations of a locality in which it may have a local habitation and name. They are ready to protest against the municipalization of the institutions. The city at most is only a part owner and contributor and may justly have its representation in the government of the university. True to university traditions, these institutions are organized so as not to be subject to official municipal control. Each one has representatives in its government of an extended area of country of which the city is only the center. For example, the University of Birmingham looks upon itself as the university of the Midlands.

While, as in the case of most of the American universities, the majority of the students live within a radius of 30 miles from the seat of

¹ See Tables 7 and 8, pp. 266-267.

² *Edinburgh Rev.*, Jan., 1911, pp. 57, 58.

the university, there is a considerable representation from other parts of the United Kingdom and from abroad. The activities of these universities, their attendance, and the contributions to their support cover something like the ground of a province of which the city is only a center; and if a name is to be taken from their location, would justify the term "provincial" rather than "municipal." Indeed in the reports of the board of education they are alluded to as the provincial universities, a term of convenience in classifying them with the London and Welsh colleges. This is not intended as an official designation of these universities, but is descriptive in accordance with the usage by which anything in England outside London is said to be in the provinces. Provincial is inapplicable as a title for these universities, because, in fact, there are no provinces by which they are circumscribed, nor are they characterized by provincialism. They might more fitly be denominated "national," in view of their large grants from Government, their national services, and the spirit of the new nationalism which fills them. But "national" is not a term which may be appropriated by any one type of university.

The use of the phrase "modern" universities, as contradistinguished from "ancient," has met with considerable favor, but also with objections from both sides. The term "modern" may be used as a two-edged sword cutting off the "ancient" university from the modern side, and the "modern" university from the ancient side, which would be fatal to both. The defenders of the "ancient" universities resent the insinuation that they are not also modern, and point to the new movements they have inaugurated and the new subjects taught since they ceased to divide the "realm of knowledge into two provinces which they used to call classics and mathematics." On the other hand, one of the "modern" university leaders has said:

The modern university is not limited to the study of things modern. On the contrary, one of the most characteristic notes of the modern spirit is that it goes back to the origins of things, and studies them in the light of their history.¹

The title "civic" university, attributed to Lord Haldane, has been gaining ground. It is a broader title than "municipal," and escapes the thought conveyed in the latter of being limited to functioning for a city and subject to direct ownership and control by a city. "Civic" acknowledges a city relationship, but may be interpreted as reaching beyond the body politic to the citizens composing it and the State. The "civic" universities are peculiarly the people's institutions and reflect in part the spirit of some of their precursors in the nineteenth century, the so-called people's colleges.² In their origin and support by the gifts of private citizens combined with city and

¹ Sonnenschein, Prof. E. A., Birmingham Daily Post, May 8, 1899.

² Cf. p. 125.

State aid, and in prominent purposes, they are "civic." The scope of the word may be gathered from what Lord Hadlane wrote:

What we most lack in this country is the penetration of the mass of our people by the spirit of the higher education. Alike in our peace and in our war organizations there is wanting the survey based on science. * * * We handicap ourselves by want of the higher training. * * * The standard of knowledge is rising, and I think that with it the moral standard is rising. * * * For the training of the necessary leaders the higher education is essential, and the universities are its only reliable source. One of the satisfactory features of our times is the large increase in the number of our universities within the last ten years and the generous endowment of them from private sources. That the State ought to do more than it does in the way of endowment I agree with the writer of this book. But I am not sure that I wish to see the burden transferred to the State in a wholesale fashion, sometimes suggested.¹

"Civic" is a name growing in popularity for this group of universities and fits certain aspects of their origin, maintenance, and purposes, but historically another name has precedence which is more characteristic and gives no ground for criticism. The "new" universities was the title proclaimed to meet the history, the facts of the case, and the wants of the new times. In 1887 Prof. Seeley prophesied of the name and thing:²

The new university which exists for study and research aims especially at comprehensiveness and universality. It neglects no subject and tries to do justice to all. * * * Modern civilization needs a vast quantity of science; the demand for trustworthy knowledge, scientific, sanitary, technical, economical, political, historical, moral, and religious, rises with urgency from these great towns. * * * It is a demand for knowledge, not for training. It is not made in the interest of the young. It calls for institutions by which the whole science of the age may be brought within the reach of all, young and old alike; in short, it calls not for new schools or new colleges, in the Oxford and Cambridge sense, but in the strictest sense of the word for new universities.

I have watched the growth of this demand and the various attempts which have been made to satisfy it from the time Maurice set up his Working Men's College on. The sense that true and pure knowledge is not nearly enough diffused among us has taken many forms. Various, too, have been the remedies proposed: Colleges of science, university colleges, working men's colleges, Queen's colleges, Newnham and Girton, university extension, teaching of politics, impartial discussion of politics, university settlements, and Toynbee Hall. * * * We have not formed the habit of expecting from universities what it might be supposed they were capable of giving, abundant knowledge on all the most important subjects. * * * There has always been some interested company regulating the supply. On the Continent it has been the state, here in old times it was the church, and more recently it has been the caprice of founders putting a money value upon the subjects they liked best. In this way the teaching of the universities has been regulated. * * * We begin to

¹ Haldane, R. B., K. C., M. P., Introduction to "Education and National Progress," by Sir Norman Lockyer. Macmillan & Co., London, 1906, pp. v, vi.

² Seeley, Prof. J. R., "A Midland University; an address delivered in the Town Hall, Birmingham, on the 10th Oct., 1887," Davies Bros., Livery Street, Birmingham, pp. 13-15.

touch a thing for which we have as yet no name, but which is larger and grander than the world has yet seen, a sort of universal university. We are forming a great teaching order which shall have its fixed lecture rooms in every great town and shall send out missions to smaller towns.¹ This order shall be in touch with the people and shall furnish the knowledge which is wanted and as it is wanted. But it shall also be in touch with science, shall never lose the pure reverence for truth, the conscientious thoroughness and accuracy which has been the boast of the older universities, and shall never corrupt truth to gratify the likings or the party rancors of its vast popular audience.

Prof. Seeley even ventured to prophesy in detail, "England, which till lately has had but two universities in the proper sense of the word, will have a dozen and perhaps the United Kingdom will have a score." Similar dreams to those of Prof. Seeley had been told. In 1879 Canon Lightfoot, in an address delivered before the council of education in Liverpool, drew a vivid picture of such a university, and the Rev. Charles Beard, with others, had drawn up a scheme for the establishment of a proposed college in that city. In 1880, at the opening of Mason's Scientific College in Birmingham, Huxley referred to those who would have looked upon such a college as a "piece of chimerical absurdity." Indeed, the realization of the dream had already begun in Manchester, in Owens College and Victoria University, and the colleges in Leeds, Sheffield, Newcastle, Bristol, and Nottingham.

The universities that have grown in the twentieth century out of the Victorian era were not manufactured at a single stroke, but, after the British fashion, were a growth from some form of pre-existent local school or college and the amalgamation of several under some external influence. With the exception of Leeds and Sheffield, there was the inspiration of a medieval endowed classical school shedding abroad in the city the spirit of higher education. Likewise the spirit of professional education had been nourished by local medical colleges. Technical schools and science colleges were naturally taproots of the universities located in large cities which had grown rapidly through the spread of industry and commerce. The municipalities induced by the endowments given by citizens came to the support of technical institutions devoted to the training of skill in local industries. This led to the rapid development of a local complete educational system crowned by its university. The base of the system is the public elementary schools succeeding the act of 1870. Upon this base rest the secondary schools reared by later acts and bearing up the university. The university fits itself closely into the system by evening schools of classes, or by arrange-

¹ Cf. Ch. XIX, "University Extension," p. 249.

ments for part-time students in industrial, commercial, or domestic subjects, and oftentimes with a correlation as far as possible of work with the evening continuation classes. The system is further cemented together by city and county council scholarships and exhibitions, which, in connection with the low fees of the university, enable the laboring and artisan, as well as the "black-coated" and commercial, classes to secure a higher education. It is not strange that the new universities, teaching so many industrial subjects, with so many students from the industrial classes, and located in industrial centers, were at first subject to misconceptions and were called industrial universities. They were ridiculed as no longer "schools of high studies," but "schools of high chimneys." Prof. Sonnenschein replied:

But it may be fairly contended that a university situated in the heart of a manufacturing district should make a special feature of those studies which stand in an intimate relation to technical pursuits. In this sense the new university will be in Mr. Chamberlain's phrase "redolent of the soil."¹

Prof. Sonnenschein pleaded for a central position of the faculty of arts in these universities. First, he took up the standard argument in a way to appeal to the public. He wrote:

There was a young man of these parts,
Who said, "What the dickens is Arts?"
Your Science I know, and your Medicine ditto;
But what's all this fuss about Arts?

The fuss is due to the fact that it is necessary to utter a protest against the attitude * * * of treating the faculty of arts as a mere handmaid of the faculty of science, as though its *raison d'être* were to provide students of science with a little light recreation and enable them to read a scientific dissertation in German or French. *Litteræ humaniores*, humanizing letters, to use the dear old Oxford term in its broadest sense, can never become antiquated so long as man is man. No one pleads for making Greek and Latin the staple of instruction in a modern university; but a faculty of letters has an indefeasible claim to existence in its own right.²

The professor in passing reprobated a statement, evidently rising from the organization of English society in classes and the traditions of the old universities, that Greek and Latin would be out of place in the new university, those studies being fitted for the "sons of the landed gentry." From the familiar argument of the importance of a faculty of arts in the new university to create an atmosphere of liberal education, the professor advanced the fresher argument of the necessity in such an institution of the faculty of arts on its "professional side." This faculty is mainly concerned with the training of teachers and with preparing men for those callings in which literary skill plays the chief part. The faculty of arts

¹ Sonnenschein, Prof. E. A., Birmingham Daily Post, May 1, 1899.

² Sonnenschein, Prof. E. A., "The Proposed University of Birmingham," read before the university graduate's club in Birmingham, Nov. 15, 1898.

is to be more broadly based for technical education widened to include all those special studies which prepare men for earning their bread in a profession. Technical education would thus rise to be professional education in professional schools or colleges, above the level of secondary school work, in connection with the faculty of liberal arts and the other faculties of the new university.

The occasional opponent in the United States of maintaining a college of liberal arts at the heart of a large university with many professional colleges would do well to note that the soundness of the above arguments is confirmed by the fact that all the new universities have established faculties of arts which have been constantly increasing in strength and influence. The friends, too, of Greek and Latin and of other classic literatures, even including Hebrew, though these subjects are not compulsory, may take heart that these studies hold their own in the new universities. These studies do not have the preeminence, of course, that they had in the old universities, but they are not belittled, and their departments are making contributions to knowledge.

Several influences outside those of the locality entered into the genesis of the new universities. Of course, the agitations we have seen operating to bring about reforms in the older universities were not without effect upon the newer. The university extension movement proceeding from Cambridge and Oxford stimulated the local beginnings to flower into the new universities, not without some fragrance of the old.¹ The life of the older universities still breathes in the newer, for it is roughly estimated that not less than 75 per cent of the heads of departments in the newer universities are graduates of Oxford, Cambridge, and the Scotch universities.

A substantial impetus to the development of these universities came from acts of Parliament at first incorporating older schools as university colleges and increasing treasury grants in aid for universities.² The Government grants magnified the duty of the universities in the direct service of the State. Some of the grants were for specific purposes leading to investigations. These fostered the spirit of research which leaders of thought had been urging as a central object of universities, and which had been stimulated by the example of German and American universities. The implantation of research, the promotion of postgraduate study, and the requirement of it for advanced degrees, and notably for the master's degree, as over against the Oxford and Cambridge conferment of it for a mere fee, served to counterbalance the popular activities of these institutions, which otherwise might have led to superficiality. The University of London, that had been of service to the university colleges

¹ Cf. Ch. XIX, "University Extension," p. 249, *passim*.

² Cf. Ch. XII, "State Aid and Visitation," p. 190.

by giving its degrees to their students, became an external influence, not as an example but as a warning. After their experience with a mere examining university, by reaction they established themselves as fundamentally teaching institutions. In 1899 Prof. Sonnenschein stated the case:

But it is quite a mistake to regard the right of granting degrees as the be-all and end-all of a university. Such a perversion of the truth has only become possible in recent times, since the foundation of an institution in London which avowedly aims at nothing more than this. And it is sometimes forgotten that the degrees of the University of London have come to bear a new meaning; they no longer denote membership of a corporation of learning, but are simply and solely labels * * *. Useful as the work has been which it has done in the past, it has become clear that the time has come to replace it by something better * * *. It is not enough to provide means whereby knowledge, however acquired, may be tested and hall marked; it is necessary to provide the means of acquiring that knowledge.¹

Before the local and general creative forces could bring the new universities to full birth, certain traditional political and legal difficulties had to be overcome. Battles had to be fought for charters. In 1877 after 25 years of successful life, Owens College petitioned the Privy Council to grant a charter converting the college into the University of Manchester. Opposition to the project was raised in various quarters, particularly in Manchester's rival neighboring cities, Leeds and Liverpool. Yorkshire College, Leeds, sent up a memorial praying, if a new university was to be created, that it should be a new corporation with powers to incorporate Owens College and other institutions, and that the university should not bear the name of a town or of any person that would give it a purely local aspect. The result was a charter in 1880 constituting Victoria University at Manchester, with Owens College as a constituent college, and with powers to admit other colleges in different localities.² In 1884 the University College, Liverpool, was admitted, and the Yorkshire College, Leeds, in 1887. Victoria University was helped to overcome resistance by the vague notion that it was in some sense a federation of colleges, remotely analagous to Oxford and Cambridge, and the university of the north of England. The idea of a "single-college university" had yet to make its way. Victoria as the university of the north of England was suggestive of the thought of a university for the Midlands.

The new departure was really made when, in 1900, a charter was granted to the University of Birmingham, due to the brilliant leadership of the late Joseph Chamberlain. Encouraged by this precedent, University College, Liverpool, the corporation of the city, and

¹ Supra, Birmingham Daily Post, Apr. 24, 1899. N. B., written before the reconstitution of the University of London.

² Cf. Ch. XIII, "Coordination of Institutions," p. 195.

other corporations of large and important towns in the district petitioned the King to grant a charter incorporating a University in Liverpool. This involved secession from Victoria University and its probable dissolution. The petition was referred by the crown to a committee of the Privy Council. Counter petitions and memorials were presented by those in favor of continuing Victoria University. Leeds and some advocates of the external examination system strongly opposed the policy of "what were nicknamed Lilliputian universities." After an extended hearing of experts and deliberations by the committee, on February 10, 1903, an order in council pronounced that a case had been made out for a grant of university charters to Liverpool and Manchester. It was added that the step involved issues of great moment and that "cooperation was expedient between universities of a common type and with cognate aims." Lord Haldane has well said:

The date of this order in council is, I think, a memorable one. It gave State recognition to a new policy. * * * The principle was accepted that the number of the English universities was to be increased and their headquarters were to be in cities.¹

Victoria University, for certain legal and historical purposes, remains as a name at Manchester.

A review of the objects set out in almost identical language in the charters of the half dozen new universities and the prominent features they have in common will elucidate their characteristics. Their charters define the universities as both teaching and examining bodies and as designed to further the prosecution of original research in all branches of knowledge. More particularly they are to confer degrees, diplomas, and certificates on persons of either sex. They may provide instruction in every faculty, in all branches of education. They are to have regard to the instruction that may be of service to persons engaged in the pursuits—commercial, manufacturing, industrial, or artistic—of the locality. They are to have facilities for the prosecution of original research. They may establish fellowships, scholarships, exhibitions, prizes, and rewards to encourage scholarship and aid students. They may examine and inspect schools and provide extension lectures and affiliate other colleges or institutions.²

¹ Haldane, Viscount. "The Civic University," an address delivered to the citizens of Bristol (reprint from the *Hibbert Journal*, Jan., 1913), p. 4. For the record of the case in the Privy Council Dec. 17-19, 1902, cf. "Victoria University, Petition of University College, Liverpool, for charter as an independent university and the further petitions, statements, and testimony in the case." This battle royal, with the reconstitution of university of London in 1900 laying the foundations for a teaching university there, marks a turning point in the history of university education in England.

² Cf. Chs. XIII, "Coordination of Institutions," p. 203; XIX, "University Extension," p. 249, *passim*.

The plan of government for these universities is practically the same¹ and thoroughly representative. Their buildings are, of course, new. They are substantial, compact, with architectural features and modern equipment, and located generally near the heart of the cities. The institutions from which they sprang were planted in the center of the cities upon small sites. Birmingham has inaugurated a departure in erecting the inevitable additional buildings upon 45 acres of ground 3 miles from the center of the city.

All the six universities have faculties of arts, of science, of medicine, and departments for the training of teachers. With the exception of Birmingham,² they have a faculty of applied science or engineering or technology. Manchester, Liverpool, and Sheffield have faculties of law, which is included in the faculty of arts in Leeds. Manchester alone has a faculty of theology and one of music. Birmingham and Manchester have faculties of commerce and Leeds and Liverpool departments.

Taking the departments together in all these universities, they cover broadly modern languages and literatures, historical, economic, and social sciences, and the physical and biological sciences and their applications. The enumeration of the degrees, diplomas, and certificates which may be secured in one or more of these universities makes conspicuous the range of subjects taught.³

The academic year for residence at the older universities, nominally 24 weeks, has been lengthened by the newer universities to 32 weeks.

¹ Cf. Chs. IX, "The Organization and Administration of Universities," p. 159, *passim*; X, "University Officers," p. 180.

² In Birmingham the faculty of science includes chairs in engineering, and gives B. Sc. degrees in pure science and in applied science.

³ Degrees and diplomas: Bachelor of arts (B. A.); bachelor of architecture (B. Arch.); bachelor of commerce (B. Com.); master of arts (M. A.); master of commerce (M. Com.); doctor of letters (Litt. D.) not hon.; bachelor of science (B. Sc., and in Applied Sci.); master of science (M. Sc.); doctor of science (D. Sc.), not hon.; bachelor of laws (LL. B.); master of laws (LL. M.); doctor of laws (LL. D.), not hon.; bachelor of medicine and bachelor of surgery (M. B., Ch. B.); doctor of medicine (M. D.); master of hygiene (M. H.); bachelor of dental surgery (B. D. S.); master of dental surgery (M. D. S.); bachelor of divinity (B. D.); doctor of divinity (D. D.); bachelor of engineering (B. Eng.) or bachelor of technical science (B. Sc. Tech.); B. Sc. in Agriculture; B. Sc. in Public Health; master of engineering (M. Eng.) or master of technical science (M. Sc. Tech.); doctor of engineering (D. Eng.), not hon.; bachelor of music (Mus. B.); master of music (Mus. M.); bachelor of metallurgy (B. Met.); master of metallurgy (M. Met.); doctor of metallurgy (D. Met.), not hon.; doctor philosophiæ (D. Phil.). The following diplomas are granted by one or more of the universities: Diploma in architecture; in civic design; in commerce; in civil engineering; in education; in electrical engineering; in domestic science; in coal mining; in dyeing; in dentistry; in fuel and metallurgy; in gas engineering; in leather manufacture and textile industries; in mining; in modern language teaching; in public health (D. P. H.); in tropical medicine (D. T. M.); in psychological medicine; in social organization and public service; in ophthalmic surgery (D. Ch. O.); in veterinary State medicine or veterinary hygiene (D. V. H.); in anatomy; in bacteriology; in biochemistry; in parasitology.

Certificates are granted in architecture; in biblical knowledge; in civic design; in commercial sciences; in applied chemistry; in separate arts subjects; in separate engineering and technical subjects; in factory hygiene; in school hygiene; in sanitary inspection; in social work; for teachers; for works pupils in engineering.

The conditions of admission tend to be more stringent than at the older universities. In general, no man student may be admitted who is less than 16 years and no woman student who is less than 17 years of age. The practice of some Oxford and Cambridge colleges of admitting students to membership before they have passed responsions or the previous examination is not paralleled, since for all degree courses the matriculation examination or an equivalent must be passed at entrance. Oxford responsions is only considered an equivalent to the matriculation examination when it includes both geometry and algebra and an additional subject. Likewise the Cambridge previous examination must include the passing of Parts I and II and an additional subject.¹ The standard of admission is safeguarded by means of a joint matriculation board² of the Universities of Manchester, Liverpool, Leeds, and Sheffield, provided for in their charters. The arrangement is a trace of the earlier Victoria University. This stiffening of entrance requirements by the younger universities, as has often been the case in America, springs from the desire to retain the respect of the older universities, to avoid "underselling" by competing universities, and to counteract the influence of the lower standards for certain courses and part-time students within the universities. In the lack of strict collegiate or residential supervision these universities tend toward a strict requirement of attendance upon courses of study, and the weighing of the whole record of the student and not simply of his intermediate and final examinations for his degree.

These universities have clearly added a fifth type to the previous types of British universities. There were the intercollegiate residential type of Oxford and Cambridge, the continuation of the original university teaching type of Scotland, the nonteaching and examination type of the older University of London, and the Federal type of the earlier Victoria, Welsh, and Irish universities. Sir Alfred Hopkinson has urged that there is not a difference of a higher and lower type, nor of subjects of instruction, but that the point of difference lies in State aid.³

While this is a point of difference, inasmuch as the State or the municipality does not affect ownership and direct control, they are not properly State institutions, and this factor may not give the name to the type. While not a lower, they may be said to be a wider, type than the old universities. They are, in fact, a composite type. They derive and combine features from the four preceding types, stress activities which had been unstressed, and take the broadest

¹ Cf. Chs. XVI, "Examinations," and XVII, "Curricula."

² Cf. Ch. XIII, "Coordination of Institutions," pp. 200-201.

³ Hopkinson, Sir Alfred, "Address, Sec. L., British Assoc. for the Advancement of Science," 1913. Cf. Ch. XII, "State Aid and Visitation."

views of the scope of a university, so that they are nothing less than a new type. They are, in fact, the nearest type in the Old World to the American university and particularly the State university. The development of the professional and scientific schools in the nineteenth century in Harvard, Yale, Columbia, Pennsylvania, and the leading State universities, with an added impulse to special service of the State in the latter, the appearance of Cornell, a halfway State institution, of Johns Hopkins, emphasizing research, and of municipal universities like Pittsburgh and Cincinnati, are tokens of the type. Indeed, Mr. Carnegie made the suggestion to Mr. Chamberlain, in offering to contribute to the foundation of the University of Birmingham, that it should take Cornell as a model at least on the science side.

The brief but brilliant history of the new English universities is confirmatory of the wisdom of the older American universities in branching out to meet modern demands, and of the wisdom of planting State universities.

MANCHESTER.

Despite their likeness to one another, each one of the new universities has not only an atmosphere, but an individuality of its own. Manchester is not only the first in time, but in size and strength and variety of activity. It is a slow growth of individual origin representative of the north of England. The first attempt to secure a university in Manchester for the north of England failed in the Parliament of 1640. Near the close of the eighteenth century, a paper, "A plan for improvement and extension of liberal education in Manchester," was published. It proposed a "connection between liberal science and commercial industry."

The Manchester Mechanic's Institution, founded in 1824, resulted in the development of the Municipal School of Technology, which has not been without effect upon the university, and is now in happy cooperation with it in a faculty of technology.¹

The immediate origin of the university is due to the bequest of one of Manchester's merchant princes, John Owens, who died in 1846. He provided that instruction should be "in such branches of learning and science as are usually taught in the English universities." He laid down the principle that there should be no theological tests for either teachers or students, and that nothing must "be introduced in the matter or mode of education in reference to any religious or theological subject which shall be reasonably offensive to the conscience of any student." Here is the modern founder succeeding the old-

¹ Cf. Chs. XIII, "Coordination of Institutions;" XIV, "Applied Science and Professional Education."

time pious founder. True to university ideals and substituting religious toleration for religious tests, he represented the spirit of Manchester. Its ancient grammar school had kept alive some notion of the classics in the center of the "workshop of the world." The vigorous controversy of churchmen and nonconformists had made Manchester as famous for freedom of thought as had its political school for free trade. It is at least a noteworthy coincidence that when, in 1851, Owens College was opened, it was housed in what was formerly the residence of Richard Cobden. One of the valuable contributions of this institution is that it has shown, without violating Owens's rule, how a secular university may happily have a faculty of theology.¹ It is surprising how simply and effectively this has been done. Theological schools of seven different denominations have been recognized by the university for external lectures of the faculty. The courses of lectures in the faculty fall into three classes. Firstly, are the courses, which are delivered within the university buildings by professors and lecturers of the university in the faculties of arts and science, in noncontroversial subjects like Hellenistic Greek, Hebrew, and comparative religion. Secondly, are courses by lecturers of the university which are delivered elsewhere than in the university buildings, open to members of the colleges in which the lectures are delivered on conditions approved by the colleges in question, and open to other students of the university on payment of fees. Thirdly, are external courses recognized by the university given by others than lecturers of the university.

A milestone in the pathway of Owens College to become a university was marked by the incorporation with it in 1872 of the old Manchester Royal College of Medicine and the opening of new buildings in 1873.

The policy of establishing a public-health laboratory as an integral part of a university naturally followed in due time and has been vindicated by Manchester. Under the public-health act, 1875, England was divided into sanitary districts. Every district council had to appoint a medical officer of health. Beginning in 1892, in districts of 50,000 or more inhabitants the officer was obliged to be the holder of a diploma in sanitary science, public health, or State medicine. When this regulation came into force the teaching of public health was fully organized at Owens College, and the newly appointed professor of pathology secured by 1894 a well-fitted laboratory. The university placed the pathological department at the service of public authorities upon the payment of fees toward the expenses of investigations carried out for them. The movement thus

¹ Cf. Ch. XIV, "Applied Science and Professional Education," p. 207.

started in Manchester in 1892 has resulted in the adoption of a similar system by many authorities in the Kingdom. The extensive public-health laboratories of the university, opened in 1905, are one of the evidences of the direct benefit to a university of immediate service of the public. The investigations demanded by the public have stimulated the teaching and led to postgraduate study and research, and to the publication of valuable contributions to knowledge.¹

The department of public health is but a specimen of the opportunities for research offered by Manchester. It has given such attention to its facilities for advanced studies in the faculties of arts, of science, of medicine, and of technology that it has drawn by far the largest number of graduate students of any of the six universities. It instituted research degrees, open to graduates or persons who have passed the degree examination of other approved universities and, under certain conditions, to candidates not so qualified. From the beginning Owens College was fortunate in securing professors who became known internationally as authorities in their subjects. The libraries of the university are supplemented by some of the largest and rarest libraries in the Kingdom, like the John Rylands and the Chetham Libraries. There is a series of new laboratories, as well as of old ones with new extensions, made famous by the investigations carried on in them by distinguished men of science. There is an especial equipment of research laboratories open not only to the staff and advanced students, but also, under certain conditions, to outside investigators. A valuable adjunct for research is found in the Manchester Museum, established for the promotion of natural science.

The synthetic chronological arrangement of the museum helped to introduce the present era of wide attention to the reform of the administration and classification of museums for the benefit both of the public and colleges. The museum is an example of the alignment of the forces of a locality with its university. The nucleus of the museum consists of the specimens which the Manchester Natural History and Geological Societies deposited in trust with the authorities of Owens Trust. The museum is under the management of a joint committee representing the university, the Manchester corporation, and the subscribers.

Manchester has one of the strongest dental departments, which in accordance with the British practice forms an integral part of the faculty of medicine.² Here we have another happy illustration

¹ "Report of the Advisory Committee on the Building and Opening of the new Laboratory at York Place and Directors' Report for the Session 1904-5."

² Cf. Ch. XIV, "Applied Science and Professional Education," p. 208.

of the association with the university of private and of city foundations. The dental hospital of Manchester, founded in 1884, for the purposes of charity and also of a dental school, with a fine new dental hospital opened in 1909 in proximity to the university, is for practical purposes the dental hospital of the university department. The dental student, like the medical student, has the use of the new Manchester Royal Infirmary, which was relocated near the university, and is another case of association with it.

One of the latest illustrations of the convergence of educational forces in the university is the establishment of the Fielden School near the college for the special purpose of demonstration and practice in connection with the university courses in child study, school hygiene, and class teaching. The school is conveyed to the university under a trust deed providing for a special committee of management. Investigations into problems of class teaching are conducted in the Fielden demonstration school, where some 200 scholars attend, distributed into 10 classes and ranging in age from 5 to 15 years. The investigations are reviewed in a graduate seminar in which the demonstrators in the department and the staff of teachers in the school participate.¹ In addition to the demonstration school the department has the benefit of association with a large number of schools, both elementary and secondary, and with special institutions in Manchester and the neighborhood.

In 1914 the university instituted the new faculty of education, to deal with the higher degree of master in education.² This makes it possible for the day-training students, in the first instance, to prepare for the bachelor's degree either in arts or in science, and subsequently, if they desire to specialize in education, to take the master's degree in education. It is intended to give the students in the department of education equal facilities with students in arts and science in obtaining the higher degree. This is one of the latest steps in the recognition of education as deserving a graduate professional school like the other professions.

In addition to the 9 faculties³ and the departments mentioned, the activities of the university include departments of pharmacy, the seven divisions of technology,⁴ the school of architecture, special popular and evening courses, university extension lectures, agriculture, and a university press.

Manchester has brought into—

line all types of higher education which a great community requires. * * * This epoch of comprehension and amalgamation is now fairly complete; the

¹ Findlay, J. J., M. A., Ph. D., Sarah Fielden Prof. of Education, "The Demonstration Schools Record." Sadler, M. E., LL. D., "The Department of Education in the University of Manchester, 1890-1911." Manchester Univ. Publications.

² Cf. Ch. XIV, "Applied Science and Professional Education," pp. 210-212.

³ Arts, science, theology, law, medicine, music, technology, commerce, education.

⁴ Mechanical, electrical, sanitary engineering, applied chemistry, mining, architecture, textile manufacture.

process has involved not so much an increase in the number of students and the size of classes as a really astounding complexity in the provision for higher teaching.¹

Manchester stands for an extensive development of the type of the new university. We shall treat the other five specimens of the type more briefly, it being understood that they have essentially the same features. We shall endeavor merely to take up points specially characteristic of each one which may be suggestive for us.

BIRMINGHAM.

As already noted, the University of Birmingham stands as the pioneer in England of the "single college university."² It comes the nearest to being a purely municipal university because of its origin, forged out of long-standing local institutions through the zeal of a group of city men under the leadership of an idol of the municipality—Joseph Chamberlain. The city had long been known as a center of progressive educational policy, the home of the founder of the National Education League and a friend of the act of 1870 and of succeeding educational reforms. The city is practically without a rival in the extensive territory of the Midlands tributary to it. "Birmingham is the supreme of industrial individualism" according to one of its inhabitants.³

The university is in one sense isolated, not being a member of any joint matriculation or examining board. It sets its own standards.

To appreciate the independence and the atmosphere of the university, we must go back of the movement resulting in its organization in 1900 to its origin in the Mason's Science College, and further to the personality of Sir Josiah Mason, its founder. In 1875, on his eightieth birthday, in laying the first stone of the college building, he states the motive and purpose of his gift. A son of poverty, he had made a fortune by the manufacture of split rings and steel pens, having begun business in gilt toy-making, then one of the staple trades of Birmingham. He said:

When I was a young man there were no means of scientific teaching open to the artisan classes of our manufacturing town. * * * My wish is to give all classes in Birmingham and in the district * * * the means of carrying on in the Midlands district their scientific studies as completely and thoroughly as they can be prosecuted in the great science schools of this country and the Continent, for I am persuaded that in this way alone—by the acquirement of sound, extensive, and practical scientific knowledge—can England hope to maintain her position as the manufacturing center of the world.⁴

¹ The Times Educational Supplement, Jan. 6, 1914. Cf. *Ibid.*, Feb. 3, 1914.

² Cf. p. 108.

³ The Times Educational Supplement, Apr. 7, 1914.

⁴ Bunce, John Thackray, "Josiah Mason. A Biography," 1882, pp. 99, 101.

In his original deed of trust he declared his intention to found a college for the "study of practical science," to the exclusion of mere literary education and of all teaching of theology. By subsequent deeds he empowered the trustees to enlarge the scope of the college to qualify it for admission as a constituent member of the London or the Victoria or any other university with a complete course in arts. He only excluded theology and politics. The breadth of the institution, a gift at that time without parallel in the annals of modern education in England, was due to Sir Josiah's wisdom, unlike that of the ordinary self-made man, in seeking the advice of experts. He selected as trustees a Cambridge graduate and distinguished representatives of the professions. In its origin the university was not without influence from the King Edward VI Grammar School, with its classical traditions, and, on its popular side, from the Birmingham and Midland Institute, incorporated in 1864. The thought of grafting his college upon the latter had even passed through the mind of Sir Josiah. The institute prepared the way for the Birmingham Technical School, opened in 1891, the school of art, the municipal school of commerce, and numerous evening classes. In the light of the above facts it is easy to see why the University of Birmingham has not evening classes and was organized with only three faculties, those of science, of arts, of medicine, and the faculty of science, including engineering, placed before the faculty of arts.

The erection and equipment of the extensive new buildings for science and engineering of the university, $2\frac{1}{2}$ miles from the old Mason College, have given a prominence to engineering, metallurgy, and mining. The metal industries of Birmingham encouraged the endowment of a chair of metallurgy, and the mines of the neighborhood have led to special attention to coal and metal mining. The faculty of arts has made special provision for training for public and social service, in cooperation with organizations in the city, like the women's settlement, the Woodbrooke settlement, founded by the Society of Friends, the Diocesan Training Home, the City of Birmingham Aid Society, the Birmingham Charity Organization Society, and various unions. The social study diplomas are awarded for success in certain university courses requiring visits of observation and practical work.

There is no faculty of music, but a professor of music in the faculty of arts. The degree of D. Mus. is given to those passing in the matriculation examination and an examination in the rudiments of music and, in addition to the three years' courses in music, three courses in the faculty of arts, one of which must be English literature, and another a course in modern foreign language.

A specialty of the university is the department of biology and chemistry of fermentation and a brewing school. In addition to the

degree courses, there are diploma courses, a special diploma course for graduates, and certificate and shorter courses for brewers and maltsters.

In 1903 Birmingham led the way in establishing a fourth faculty, the faculty of commerce, and called to be its dean an Oxford man, who had been a professor at both Toronto and Harvard. The influence of departments of higher commercial education in modern democratic universities in America, and of the commercial colleges in Germany, recognized by the Government as of university rank, has been felt.¹ The courses of instruction have two objects in view, the combination of liberal culture with utility, and a due regard for the different requirements of different branches of commercial life.

The curriculum for candidates for the degree of B. Com. covers three years. Certain specifically commercial courses are required of all candidates. One modern language is prescribed for three years. A noteworthy choice is given to two classes of students, those expecting to be engaged in the *commercial* conduct of *manufacturing*, and those who expect to be *merchants* in the narrower sense of the term. The first group may devote about one-third of their time to work in applied science.

The options also include subjects likely to be useful to those who propose to enter upon the commercial management of collieries and other mines, or of agricultural undertakings, or business life in the colonies. A similar freedom of choice of studies in the faculty of arts is given to those intending to enter upon railway or shipping management, or looking forward to service in consular or municipal departments, in chambers of commerce, in stockbroking or financial houses.

The faculty of commerce has taken under its wing a scheme for a course for journalists until such time as a full degree course in one of the faculties, with the technicalities of journalism as one of the subsidiary subjects, can be instituted.² A certificate is proposed for journalists of the neighborhood who attend university lectures for five hours a week for two years and pass the examination. The group of subjects recommended centers about literary and historical topics and includes certain commercial, economic, and social courses.

The faculty of medicine, like that of Manchester, includes dental courses organized by the university in association with the dental hospital. The medical faculty, after the fashion of many American universities, offers a combined course of six years, instead of five, by which university students may obtain the B. Sc. in addition to the medical degree.

¹ Edwards, Allen, F. C. A., "What the Birmingham University is doing in the interests of higher commercial education." Revised and reprinted from "The Jeweller and Metal-worker," June 15, 1906, Unwin, London.

² Cf. Ch. XIV, "Applied Science and Professional Education," p. 212.

The university has a scheme for vacation reading by which books are named for a course of reading preliminary or supplementary to the courses given in the university.

The university is beginning to use its powers of affiliating other institutions in affiliating the Midland Institute. It is even arranging a quasi affiliation of two theological colleges. Forbidden itself to teach theological subjects, it is yet able to make arrangements to enable theological students in approved colleges to take one or two years for the B. A. degree in these colleges. The university has temporarily loaned some of its lecture rooms and laboratories to the municipal technical college for evening classes, another illustration of the way in which it has been cooperative with surrounding institutions.

Birmingham may be compared in its aggressive spirit and activities to an American town full of manufactures of Yankee notions. Keen mental activity issues in an interest in education and particularly in the branches advantageous for the products of the place. Institutions founded by private enterprise are sustained, if not actually supported, by the pride of the city.¹ Of the six civic universities, Birmingham has the largest annual contribution from the city treasury, and the most valuable grounds, buildings, and equipment. It is a monument to local education and patriotism.

LIVERPOOL.

The rivalry between the cities and the Universities of Manchester and Liverpool, places and institutions in proximity and almost of equal size, has resulted in universities quite alike in extent, but with marked contrast in details due to differences in the history of the localities. Owens College gave Manchester an apparent start of 30 years. But preparatory movements had long been at work in Liverpool. The Athenæum, founded in 1799, and the Royal Institution, in 1817, fostered the humanities. The medical school established in connection with the Royal Infirmary in 1834, realizing the necessity of the scientific training preliminary to the study of medicine, became the primal germ of the university. In 1836 a member of the town council urged in the meeting of the council that a university was the chief need of the town. After 1857 an attempt was made to organize evening courses to prepare for the degrees of the university of London, in a so-called Queen's College. In the late seventies university extension lectures conducted from Cambridge

¹ Cf. The Birmingham School of Art, founded by private subscription, taken over by the municipality and largely sustained by a direct city tax levy; also a school of jewelers and silversmiths taken over by the city council. (Report of Consul Albert Halstead. "Artistic Education in Birmingham." Daily consular and trade reports. Washington, Dec. 2, 1910, p. 845.)

and the example of the founding of university colleges in other great towns stimulated the local movement to establish such a college. In 1878 town meetings were convened by the mayor in the interest of the proposed college. Public-spirited citizens continued the agitation, made special appeals to men concerned with literature or science, secured subscriptions amounting to \$500,000, and in 1881 a charter for the college.

Liverpool lies near enough to Ireland to have the usual religious differences in England accentuated by the division between Roman Catholic and Protestant. The usual provision in the charter that there should be no religious tests was ironclad, with the addition that no gift or endowment should be accepted to which any theological condition was attached. The competition with Owens College, constituted a college in the new Victoria University in 1880, became acute in 1883, when by a supplementary charter Victoria University was empowered to confer medical degrees in addition to others. Driven by this circumstance, the Liverpool Royal Infirmary School of Medicine became incorporated with the new University College, and the college sought and gained admission as a constituent college of Victoria University in 1894. After this date the rapid growth of the college, the inconvenience of doing business at Manchester, the seat of Victoria University, and the success of Birmingham in 1900 in gaining a charter for an independent or unfederated university, precipitated an appeal to the privy council for the dissolution of the ties with Victoria University, which ended in the granting of the Liverpool University charter in 1903. The increased expenditure entailed by the establishment of the university has been met by public subscription, and by increased grants from His Majesty's treasury, from the city of Liverpool, and from the councils of adjacent counties and other corporations.

The college and the university extended their range of activity and adopted the policy of cooperation with authorities and organizations outside the institution. There is a suggestive list of such undertakings. The Day Training College for teachers in elementary schools was opened in 1891 with a board of management of lay as well as of academic members.

The school of hygiene is conducted in conjunction with the health committee of the corporation for the systematic instruction of inspectors and others in matters of public health.

The school of commerce was originated in 1889 under the direction of a committee representing the college, the municipal authorities, and the leaders of commerce.

The school of tropical medicine, founded in 1898, and incorporated in 1905, is governed by a committee representing the university, the

Royal Southern Hospital, and the merchants and shipowners of Liverpool. It and its twin school in London¹ sprang from the imperial thinking of Mr. Joseph Chamberlain when in the office of colonial secretary.

The school of veterinary medicine, established in 1904 under a board of veterinary studies, makes use of university buildings, corporation veterinary hospitals, and public abattoirs.

The school of dental surgery under the board of dental studies is one of the largest of the kind and has an attendance of nearly 100 students. As early as 1893 a school of architecture and applied arts was started. Later the art classes were incorporated with a municipal art school. The school of architecture was continued in the university as a professional school for architects, at a university standard, on a level with other professional schools. The teaching staff in purely architectural subjects is supplemented by teachers of cognate subjects in the faculties of arts, science, and engineering.

The school of civic design, or of town planning and landscape architecture, was added in 1909 as a department of the school of architecture. It is the only school in this country exclusively designed to meet the needs of students who wish to study town planning.

The school of social science and of training for social work is the outcome of arrangements by the university with the central relief society, the Victoria settlement for women, and the university settlement for men.

The school of local history and records furnishes systematic training in the study and editing of the history of records of the city of Liverpool and adjoining counties. Courses are given in paleography, diplomatics, English numismatics, and the bibliography and sources of English mediaeval history.

The school of Russian studies was initiated in 1907 by the mayor of Liverpool and the chamber of commerce. The subject is recognized for the university degree or for a certificate. Attention is given to the qualifying of Englishmen for posts in connection with Russian trade. The school issues "The Russian Review," containing results of researches in Russia and translations.

There is a school of pharmacy. Research fellowships and scholarships, chiefly for research in medical or other scientific subjects, include some open to members of colonial universities and medical schools and to members of universities and medical schools in the United States.

The number of postgraduate students at the university testifies that it has not forgotten, amidst its wide activities, to reserve strength

¹ Cf. Ch. XV, "Advanced Study and Research without Graduate Schools," p. 217.

for research. Another evidence to the value it places on the work of the faculty of arts as well as research is the Institute of Archæology, founded in 1904.

The world-wide environment of the University of Liverpool, situated at one of the world's greatest ports, gives the university a peculiarly imperial and international aspect. "Liverpool is the Venice of our times and has its Padua within its own borders."¹

LEEDS.

The University of Leeds, imbued with the strenuous and democratic spirit of Yorkshire, is perhaps the nearest like a Western State university of any university in England. Under the recent leadership of a cosmopolitan student of education,² it has had a vigorous administration, extending its activities, and not fearing to embark upon experiments. As a constituent college in Victoria University from 1887 to 1904 with Owens College, Manchester, and University College, Liverpool, it bears a close resemblance to them. In proportion to the population of the cities, Leeds receives larger local support than its sisters. As Yorkshire College, the name by which it was known as a constituent of Victoria University, it stoutly opposed the dissolution of the Federal university. The event, however, caused a rally of Leeds to its renewed support. The enlivened competition of Manchester, Liverpool, and Sheffield may have further redounded to its good. Like the other universities, it shows traces of its earlier origin. Yorkshire College, founded as Yorkshire College of Science in 1874, rose in the period of the introduction of modern science into education and of Huxley's influence. The older Leeds School of Medicine, begun in 1831, was driven, in view of the empowering of Manchester to grant degrees in medicine, to amalgamate with the Yorkshire College in 1884.

As in the case of the Mason College of Science, Birmingham, the traditions of Oxford, Cambridge, and Scotch universities permeated the college of science, and in 1877 the faculty of arts was implanted in the Yorkshire College of Science. This faculty has flourished amidst a predominance of scientific courses. It has been modernized and includes a department of economics and commerce, of education, and of law. Departments of Greek and Latin have doubled their staffs and practically the number of students since the inauguration of the university, at which time the honors school of classics was instituted. These departments are contributing to classical

¹ *The Times Edu. Supplement*, Feb. 3, 1914.

Cf. University College and the University of Liverpool, 1882-1907 (*Univ. Press of Liverpool*, 1907); Muir, Ransay, "The University of Liverpool. Its present state," *Liverpool*, 1907.

² Vice Chancellor M. E. Sadler, LL. D., Litt. D., C. B.

knowledge, local history, and making an opportunity for research by conducting excavations of Roman sites in Yorkshire. One of the classical lecturers is devoting himself particularly to the study of Roman Yorkshire, and the other to that of Greek inscriptions. The university has endeavored to interest the general public in classical life and literature by the performances of Greek plays in English verse translation. The lure of the locality has added to the zest of investigations in the department of English language and literature. In this region famous for dialect, dialectal research has been pursued by the university and the Yorkshire Dialects Society. Records of the speech are being made by means of a dictaphone.

The faculty of technology looms large in Leeds.¹ Chemistry in its various aspects is the central study in this university. There is a cooperative group of teachers and researchers in organic, inorganic physical, and biological chemistry, in chemistry of agriculture, color chemistry, chemistry of gases and fuel, and chemistry of the leather industries. The doctrine of the synthesis of departments is preached and practiced. The vice chancellor expresses it:

A great work of science at this time is the breaking down of division between the compartments of it. The growing lines of new thought are along the edges which mark what were once the separation of one branch of science from another. The fact that the departments of economics, the departments of education, and the departments of geography in our universities are all growing is an indication of this tendency toward intellectual synthesis—a synthesis which brings into the common stock, and which is able to focus on some common problem, knowledge drawn from many branches of investigation. In spite of this a good deal of our university training is departmentalized.²

The doctrine is admirably illustrated in the department of leather industries, with which there is nothing to compare except at Lyon.³ The department, in addition to teaching and research, freely serves the leather trade and is assisted by the Skinners Co., of the city of London, and by members of the leather trade. The department makes a great point of trying new things and the applications of science in practical work, in shop, and laboratory run together. Physics, chemistry, technical microscopy, bacteriology, and mycology are applied to leather manufacture. Within a dozen years revolutionary changes have been made in tanning. The age-long use of animal manures has been supplanted by artificial and hygienic "bates." Bacteriological cultures and coal tars have given us "synthetic tannins"—a triumph of the synthesis of departments.

¹ It includes, in a series of buildings, agriculture, coal gas and fuel industries with metallurgy, engineering, leather industries, mining, tinctorial chemistry, and dyeing and textile industries. There are advisory committees (university and lay members) of council for the several departments.

² Sadler, Dr. M. M., vice chancellor of the University of Leeds, "The Official Report of the Church Congress held at Middlesburgh, 1912," p. 254.

³ École Française de Tannerie, founded 1806, as a section of École de Chimie Industrielle, an annexe in 1883 of the Université de Lyon.

A further practice of the doctrine of departmental synthesis is the weekly meeting of the science staff in a colloquium, to compare the points of view of all the departments with reference to a research in progress. The fruit of such cooperation is yielding original contributions to knowledge.¹

In view of Leeds as a great center of woollen manufacture, the Cloth Workers Co. of the city of London established the two departments of textile industries and of tinctorial chemistry and dyeing, which constituted an important part of the original Yorkshire College. They have continued the erection and equipment of the buildings and given a permanent endowment for the work. In addition to instruction, provision has been made for experimental studies and research.

A recent significant event is a reciprocal agreement between the university and the Bradford Technical College, under which students of the university make use of the practical dyehouse of the college, while Bradford students may attend certain lecture courses in the university. Members of the university and of the college have begun to collaborate in investigations made at the instance of the textile institute. Such cooperation in teaching and research between the close neighbors, Leeds and Bradford, both candidates formerly for the seat of the university, it is hoped will lead to a new era, which will be of advantage both to the university and the college.²

The department of agriculture has its roots in every part of Yorkshire, and, in connection with the recent establishment by the Government of the Animal Nutrition Research Institution and other steps, is becoming a great research station.³ The American example is not without effect in this field.

In 1913 the city of Leeds new training college was opened by the president of the board of education. He alluded to the nationalization of the training colleges and the increasing cooperation of local education committees working with one another and with the provincial universities.⁴ This broad hint from the minister of education, reinforced by the liberal Government grants to the university and to the training college, may hasten the day of the coordination of the two institutions. The strong department of education in the university and the university's expansive policy and desire to serve the public, combined with the Yorkshire thrift of the local education authority, may be trusted to work out the problem in a way that will be instructive.

¹ Cf. Bragg, W. H. and W. L., "The Reflection of X-Rays by Crystals," *Proc. of the Royal Society, A*, Vol. 89, p. 246; "The Structure of Some Crystals, as Indicated by Their Diffraction of X-Rays," *ibid.*, p. 248; "The Structure of the Diamond," *ibid.*, p. 277; "The Reflection of X-Rays by Crystals," *ibid.*, vol. 88, p. 428.

² Cf. Ch. XIII, "Coordination of Institutions."

³ Cf. Ch. VII, "Agricultural Colleges and Schools," pp. 139-147.

⁴ Cf. Ch. XIV, "Applied Science and Professional Education," pp. 211-212.

SHEFFIELD.

The University of Sheffield perhaps comes the nearest of all to being a purely municipal university. This is true of its origin, conflict for recognition, the district it serves, its support, its attendance, and its immediate purposes. As usual, in the order of time, a medical institution was the beginning. But a popular rather than a professional need was really the origin which formulated itself in a so-called "People's College." In 1842 a Congregational minister, dissatisfied with the results of what he thought to be the too utilitarian education of the popular Mechanic's Institutes, opened practically by himself a college chiefly devoted to language and literature. It was the period of Chartism. It is a striking fact that in the year of revolutions (1848) the citizens of Sheffield held a public meeting to approve a scheme for the reorganization of the People's College.¹ It was to be self-supporting and governed by the students. The foundation and success of the Sheffield People's College has more than a local interest. The Working Men's College of Great Ormond Street, London, owed its existence to the pioneer work of the Sheffield institution. Frederic Dennison Maurice stated, "We were plagiarists from the Sheffield people."² The People's College was closed in 1879. Having fulfilled its mission, it gave way to the university extension movement. The first series of extension lectures in connection with the University of Cambridge was begun in 1875. The local enthusiasm was so great that the mayor, Mr. Mark Firth, donated a building for this work. Firth College was opened in 1879, the year before Owens College secured the charter for Victoria University. The idea of a university for the northern counties was in the air, and Sheffield was astir in the rivalry with Manchester and Leeds.

There had been an increasing demand for some form of technical education. It began among apprentices at evening classes connected with the South Kensington science and art department organization. These classes were also started in the old Sheffield Mechanics Institution. By 1883 the City and Guilds of London Institute granted an annual sum to found a professorship of mechanical engineering. The outcome was the founding of a technical school to provide instruction in iron and steel metallurgy and in engineering, at first opened as a branch of Firth College. By 1897 a university college charter was obtained under which all interests were united. Sheffield had failed to be admitted to Victoria University.

¹ In this same period a colony of Congregationalists founded a "People's College," now known as Grinnell College, in Iowa, and the new State University of Iowa was housed in a Mechanics' Institute.

² Cf., Green, Prof. J. A., "The University of Sheffield." *British Association Handbook and Guide to Sheffield*, 1910, pp. 135-152, *passim*.

At the time of the break-up of the Victoria University, the suggestion that the University College of Leeds should become the university of Yorkshire stimulated Sheffield to raise funds for a university of its own. The city council passed a resolution approving of an application for a charter for a university in Sheffield, and pledging a large annual grant. Grants were also promised from the County Councils of Derbyshire and the West Riding of Yorkshire and several town councils. An endowment fund of \$500,000 was subscribed, and the charter was granted in 1905. Thus happily ended the struggle for recognition.

The location of Sheffield, only just within the borders of Yorkshire, and the proximity of Leeds, Manchester, Liverpool, and Nottingham, with their institutions, give the university a rather circumscribed but thickly populated district. Its municipal area, however, is the largest in the country, and it is sustained by the enterprise of a homogeneous and growing manufacturing center.¹ Sheffield has the largest percentage of total income from annual grants, from local authorities, of any of the six universities (29.2 per cent). Sheffield has a much larger attendance from the locality than the other universities, due in part to its numerous evening classes as well as to its situation.

The charter of the university gives the usual unlimited scope to the university, but has the following suggestive section:

To provide for such instruction, whether theoretical, technical, artistic, or otherwise, as may be of service to persons engaged in or about to engage in education, commerce, engineering, metallurgy, mining, or other industries or artistic pursuits of the city of Sheffield and the adjacent counties and districts; and to provide for the prosecution of original research in arts, pure science, applied science, medicine, surgery, law, and especially the applications of science.

The world-wide fame of Sheffield as a center of iron and steel industries, of engineering and "the heavy trades," of armor and ordnance, the United States Government even placing orders there, of cutlery, and of silver plate, may well account for the preeminence given in the university to the departments of engineering, and of metallurgy, of iron, steel, and nonferrous metals.

The dean of the faculty of applied science approved of the title "Applied Science"² as contradistinguished from technology, which deals with the application of science to trades. Applied science takes hold of advanced work not that of secondary schools. Applied science relates the trade school to the highest branches of science and passes over to the industries the ripest fruits of science. The engineering departments have extensive buildings by themselves,

¹ In the census of 1911 Sheffield showed the largest percentage of increase of population of any of the university cities, 11.1 per cent.

² Cf. Ch. XIV, "Applied Science and Professional Education," p. 205.

built upon the unit plan and recently enlarged. The metallurgical department, so far as iron and steel metallurgy is concerned, has unique laboratories. There is also a complete new suite of rooms and laboratories for the departments of nonferrous metallurgy, mining, and applied chemistry.

The war has brought to the flourishing industries of Sheffield an increased impetus. The recently appointed vice chancellor,¹ an Oxford man of classical and historical attainments, in a speech since the beginning of the war, has held up the ideal that British universities should rise to the opportunity of opening their facilities more widely for research, so as to bring a migration of students from all the world, as has been done in the past by the German universities.²

BRISTOL.

The University of Bristol, the youngest of all British universities, only half a dozen years old, has endeavored to cover the good points of its five elder sisters. Like the others, though so new it is a growth of years. The Bristol grammar school, chartered in 1532, and later numerous foundations of divergent type within the city and the western counties furnish a broad preparatory school basis for a university. Within the circle are famous public schools like Clifton, Cheltenham, and Marlborough. A vigorous University College founded in 1886, which incorporated with itself in 1893 a medical school was the taproot of the university. When through Government grants and the generosity of Bristol merchant princes the University was chartered, it was able to ally with itself the Merchant Venturers' Technical College to serve as an engineering faculty. This college is one of the monuments of the generosity of the Society of Merchant Venturers, a body like the great city companies of London, and a reminder of the ancient glories of Bristol as one of the chief ports of commerce. The charter of the university recognizes that it is not to be merely a municipal university, but virtually the institution of the great west country. Provision is made for representation in the supreme governing body of the counties of Cornwall, Devon, Dorset, Gloucester, Somerset, and Wilts. Indeed, the stretch of country from Salisbury to Truro is covered by ex officio members of the court. Representatives within the district of various denominations are also members of the court, which is quite in accordance with the religious spirit of the west country. By the charter the university is empowered to affiliate other institutions

¹ Fisher, H. A. L., LL. D., F. B. A.; now (1917) minister of education.

² One difficulty is the British requirement of not less than two years of residence for a degree, whatever the preparation of the candidate may have been.

or to admit the members thereof to any of its privileges. The university has adopted an ordinance for the—

Association of Institutions to supplement the teaching of the university in such branches of professional or technical knowledge as it may deem fit, institutions in which teaching of a specialized character is given, or in which facilities of research in specialized directions are afforded.

Pursuant to this ordinance the Bristol Baptist College, the Western College, Bristol, and the Theological College, Salisbury, have been associated with the university to offer a curriculum, in part, of a theological character for the B. A. degree. Under the same ordinance the Royal Agricultural College, Cirencester, and the National Fruit and Cider Institute have been associated with the university. The latter has just been equipped as a research station for agriculture and horticulture.

The university has provided for a "testamur in social study," requiring a curriculum of two years, and a "testamur in journalism," with a curriculum of three years. There is also a testamur course of two years for engineering apprentices. Over against these short courses the university offers work for honor and advanced degrees. It has some special funds for research and advice. It is leading in a departure in offering degrees for original research for candidates previously declared by the senate to be qualified for such research, the research being accepted in lieu of the pursuance of a curriculum of study. The candidates have to submit a satisfactory dissertation in the subject concerned, and they may be examined in the subjects of the dissertations. The university has the advantage of new buildings and modern laboratories.¹ The chemical laboratory is one of the best examples and has even been held up as a model for German laboratories to follow by visiting German professors. The structure is of steel concrete and stone, so designed that nearly all the internal walls may be altered or removed. It is constructed upon the unit system, so that it may be extended by wings or the addition of another story. The professors' private rooms and laboratories are centrally situated, and supervision is aided by the introduction of glass windows in the wall between the rooms. Private experimental rooms off the laboratories are similarly provided. Evidently one of the points of specialization in Bristol is to be chemistry.

The University of Bristol is passing through the struggles of youth and has the promise of youth. It will be specially near to the younger universities in America. Lord Haldane, at his installation as chancellor of the university, said:

¹ In 1915 it is announced that \$200,000 has been added to a previous benefaction of \$900,000 for buildings, given by one family.

The awakening has come to the old universities late. They are now doing very fine work, but they ought to have been able to develop it much sooner. * * * If the new English universities can keep their level high, they may be able to develop a certain advantage over the older English universities. * * * It is to the production by the civic university of the quality of alertness in the average as well as in the exceptional student that I look with hope for the future. * * * I can see no limit to what may be the development of the civic university within the next hundred years. I look to its becoming the dominant and shaping power in our system of national education.¹

¹ Haldane, Viscount, "The Civic University," reprint, 1918, pp. 15, 16.

Chapter V.

INDEPENDENT UNIVERSITY COLLEGES.¹

Exeter, Nottingham, Reading, Southampton.

The meaning of the term "college" is still so indefinite and without legal definition in England that it is desirable to use an adjective with it. Otherwise it may stand for any kind of a corporation of colleagues in business as well as in education. Private schools for girls or boys much affect the term. It has a standard meaning for preparatory and older "public schools" like Winchester and Eton. The ancient colleges in Oxford and Cambridge have given the world its highest meaning, hence the adoption of the name "university college" by modern institutions having a curriculum preparing for university degrees.² The first of these colleges, outside Oxford and Cambridge, but without their tutorial and residential features, was University College, London, incorporated under this name in 1836.³ It has been the model for most of its successors. "University college" has come to have a more sharply defined meaning and to be a standard college since the Government began to give grants in aid for universities and university colleges.⁴

The objects of these institutions in general are to supply higher literary, scientific, and technical education qualifying for degrees at any university in the United Kingdom. They also give preliminary legal, medical, and engineering courses, and special instruction in commercial, industrial, or art subjects of interest to the locality. They maintain courses for teachers of elementary and of secondary schools. For their degree courses they have what might be called a modern curriculum with a wide range of subjects. For admission they require the passing of the matriculation examination of the University of London or its equivalent. They also furnish some facilities for research and preparation for advanced degrees. They do some extension work chiefly by popular lectures in the vicinage. The college proper, with its full-time day students, has also part-time and evening students in short courses. Not being able to give

¹ See Tables 9 and 10.

² Cf. Chs. I, "Oxford, Cambridge, Durham," p. 26; II, "Scotch Universities," p. 54.

³ Cf. Ch. III, "University of London," pp. 67, 72-76.

⁴ Cf. Ch. XII, "State Aid and Visitation," p. 190.

degrees, it gives diplomas of associateship in the college, and certificates for the completion of the shorter courses. The colleges, like the newer universities, are growths from private foundations, aided by local and State appropriations. For example, Hartley College, Southampton, was founded in 1850, but was not able to meet the requirements of the board of education and to become a recognized university college until 1902.

The colleges have a common plan of government. The supreme governing body of considerable size is the court of governors, except in the case of Nottingham, a mixed body of representatives of the many interests from which the colleges sprung. In Nottingham the court of governors consists only of the president, the vice presidents, and the mayor, aldermen, and citizens of the city of Nottingham, acting by the city council. The second and executive governing body, consisting of a small number of persons, is the council. The third body, dealing with purely academic matters, is called an academic board or senate.¹

The four independent university colleges in England are the Royal Albert Memorial University College, Exeter (at present not meeting the financial requirements of the board of education); the Nottingham University College; the University College, Reading; and the Hartley University College, Southampton. In 1913 an appeal for subscriptions toward the endowment of a proposed university college for Sussex was issued. Not less than \$250,000 would be required for an endowment fund. It was hoped that the town council of the Brighton Technical College would join in the scheme and thus would supply modern and well-equipped buildings which would answer for some years to come. It was also hoped that the agricultural college at Uckfield might be included. If this fifth university college were to be established as a university center for south-east England, it would complete geographically a distribution of institutions convenient of access for university study throughout all England. The royal commission on university education in London anticipated the rounding out of the new university and university-college movement in some such way, in the meantime empowering the University of London to recognize public educational institutions within its extended area as schools of the university.²

The ideal is involved of university colleges of high enough standards to become constituent colleges in universities of the highest grade. Present experience proves "that it is impossible to conduct an efficient university college, including teaching both for day and evening students in the faculties of arts, science, and engineering,

¹ Cf. Ch. IX, "Organisation and Administration of Universities," p. 159.

² Final Report of the Commissioners, 1913 (Cd. 8717), pp. 168, 175.

unless an income of \$100,000 a year is assured." It is pointed out that the annual cost would much exceed this figure in an ideal university college, organizing the groups of departments devoted to university work separately from those doing work of a lower kind.

The following points, among others emphasized by the board of education in recognizing courses in university institutions, will complete the general idea of a standard university college.¹ The board takes into account the circumstances and characteristics differentiating the work and function of the university institution from other institutions not of university rank. The board puts into the forefront the standing and efficiency of the teaching staff and the extent to which both the staff and advanced students are active in research. The board lays weight upon a high standard of admission. Not only must the matriculation examination have been passed, but the entrant should have been in attendance at a secondary school for at least 4 years subsequent to the age of 12 and be over 17 at the time of his admission. To safeguard the university character of the instruction the—

grants of the board are not available in respect of courses in preparation for a matriculation examination, nor in respect of courses in religious subjects; nor will they ordinarily be available in aid of a university institution which gives day instruction of a lower standard than that of diploma courses. A diploma course is one of not less than two years' duration, fitted for students educated in secondary schools up to the age of 17 at least.

Ordinarily a university institution has a department for the training of teachers for elementary and secondary schools. The board recognizes a four years' course, of which the first three years are devoted mainly to study in preparation for a degree and the fourth to professional training.

Despite the new and numerous separate local training colleges, this encouragement by State grants in aid of departments in connection with university colleges for the training even of elementary teachers is significant. We have confirmation of the wisdom of the recent development of teachers' colleges in American universities and of departments of education with possible State subsidies in American colleges.²

The study of the English university college supports the vigorous efforts in the United States during the last decade to standardize the college. The tendency in the United States to develop a college into a university and to multiply universities might well be checked by the conservatism of the English in these matters. Their famous "public schools," which come the nearest to our older type of American colleges, resist any thought of expansion into university col-

¹ "Board of Education; Statement of Grants Available, etc." (Cd. 6794), 1918, *passim*.

² Cf. Chs. IV, "The New or Provincial Universities," p. 124; XIV, "Applied Science and Professional Education," pp. 210-212.

leges, though they may add a "modern side." There is a strong feeling that the 15 universities and university colleges at present existing in England, giving one institution to each three millions of inhabitants, is enough. Severe tests, at least, will be applied to any new claimant to the title of "university."

The University College, Reading, is a case in hand. It has announced that it expects to become a university and will welcome the application of the highest standards for admission to the sisterhood, and willingly prolongs its period of preparation. It is a university in the making. "Indeed, it is claimed that a university is rising in Reading such as England has not seen before."¹ It proposes to be the one modern English university with a residential and tutorial system at half the expense of Oxford. Outsiders say in pleasantry, "Reading is becoming a cheap Oxford."

It repeats the story of gradual growth and amalgamation of various enterprises. The germ was the art classes inaugurated in 1860 in connection with the science and art department of the nation, one of the fruits of the exposition of 1851. In 1885 Oxford opened university extension lectures in Reading. These were so successful that, with the substantial encouragement of Christ Church, Oxford, by 1893 we have the university extension college, Reading, the schools of science and art being departments of the college. In 1893 a department of agriculture was initiated. In 1895 the British Dairy Farmers' Association agreed to move to Reading the Dairy Institute and to associate it with the college. In 1902 a department of horticulture was organized. In the same year, upon the favorable report of the commissioners of the Treasury, the college was recommended for the receipt of Treasury grants as doing work of university college rank, and therefore the title was changed to "University College." By 1909 a college committee began to investigate the question of the development of the college into a university. A deputation visited centers of agricultural education and research in Canada and the United States and reported in 1911.² In that year the college decided to apply at an early date for a charter as an independent university.

The character of the proposed university was delineated in a summary paragraph: "A university moderate in size and exercising the power of selection and rejection in regard to its students; a university self-governing and well organized; a university providing education at a moderate cost; a university distinguished by resi-

¹ University College, Reading. Twenty-First Anniversary, Michaelmas Day, 1913, p. 7.

² "Agricultural Education, in America and in England. Report of a Deputation Appointed by the Council of University College, Reading, to Visit Selected Centers of Agricultural Education and Research in Canada and in the United States." (Reading, 1910.)

dential halls, care of the individual student, and exceptional facilities for agricultural instruction and research."¹

The affirmation that "the only sure basis for a university is endowment" was sustained by the announcement of the gift of an endowment fund of \$1,000,000.

Preparatory to becoming a university the teaching staff of the college has changed its organization from a series of departments into three faculties of letters, science, and agriculture. During the four years since 1911 the college has patiently, through committees, studied the preliminary questions relating to the proposed university policies in constitution, curriculum, buildings, and finance, but it has not yet applied for a charter. Such is the patience of the British in the preparations for a university and their recognition of the great difference between a college and a university.

A deeper motive impelling a university college to attempt its transformation into a university is the reservation to the university alone of the power to confer degrees. The university college is limited by the syllabus of studies and examinations set by an external body for an external degree. Even if it is affiliated, three years' work gains exemption from but one year of residence in the university. Every university requires not less than two years of residence for its degree. One is led to understand the feeling in the statement from Reading:

A college which is preparing to be a university can not fail to respond to the idea of freedom and responsibility. It wishes to be a university just because it wishes to gain freedom for its teaching. A university college is an institution doing university work without university independence * * *. We resemble a body of private tutors doing piecework under the direction of external authority * * *. The spring of educational vigor is freedom; and without freedom the best university work is impossible. Sooner or later a self-respecting body of teachers of university standing will insist upon having it.²

Fortunately the independent American college with the power to confer its own degrees has had no occasion to make Reading's plea for freedom. On the other hand, it is without Reading's excuse for expanding into a university. Reading vindicates the great place the independent strong American college has to fill with its modernized curriculum and expanded activities.

The other new universities are "great-town" universities in industrial centers. Reading urges the need of a university of the new type in a comparatively small town, with space for lawns and gardens, hostels, and athletic grounds. The advocates of Reading claim that "a new university is not necessarily urban; and the university is to stand in relation to the population of half a dozen counties as

¹ "University College Reading," *supra*, pp. 16-18. Cf. Ch. VII, "Agricultural Colleges and Schools."

² "The Reading University College Review," Mar., 1913, p. 95.

well as to a town of 80,000 people." It has long been conceded that the ideal site for a college is in the country. In the dispute between the advantages of rural and urban universities, colored by the interests of the disputants, Reading takes the broad view that both types of universities are needed.

Reading, as a semirural university, hopes to become a leader of a new order of universities in Great Britain by having a rounded-out faculty of agriculture, coordinate with the faculties of arts and of science, and with the instruction given in the centralized institution and an adjacent farm. They are giving special attention to the problem of university agricultural education. The deputation from the college which visited Canada and the United States in 1910 to gain hints upon this subject were greatly impressed by the example of Cornell and Wisconsin Universities.¹ It may be said broadly that they find a model in these institutions, and they confirm the policy of concentration in one university of all faculties, including that of agriculture.

¹ "The Times Educational Supplement," Nov. 3, 1914.

Chapter VI.

TECHNICAL COLLEGES AND SCHOOLS.¹

The use of the term "college" for a technical or agricultural institution parallel in rank with a university college is gaining ground despite the continued loose use of the name. The title "Provincial technical colleges" is prefixed to a list of above 80 of these institutions in the United Kingdom, though but 17 of them lay claim to the name, and not more than half of the 17 deserve the name.² Some well deserving it do not use it. It is interchanged with "school" and "institute," which, as a rule, are of lower grade. The increasing influence of these "provincial technical colleges" and their congeners in London, the Imperial College of Science and the Polytechnics, upon the universities is approximating that of the "great public schools." The too little noticed movement from which they sprang, antedating that in Germany and the German influence in England and America, follows hard upon the beginning of the age of modern invention and science at the close of the eighteenth century, for which the inventions of Watt and Whitney prepared the way.

John Anderson, professor of natural philosophy in the University of Glasgow, bequeathed his property in 1795 to found Anderson's University. The father of the new movement was Dr. George Birkbeck, between 1799 and 1804 the professor of natural philosophy and chemistry in the Andersonian institution, which is now embodied in the Royal Technical College, Glasgow. In 1800 Dr. Birkbeck began popular lectures to mechanics, out of which originated the Mechanics' Institution in 1823. By that year Dr. Birkbeck, with the encouragement of Lord Brougham, one of the movers for forming University College, London, established the London Mechanics' Institute, now known as Birkbeck College. In the meantime, in 1821, in Edinburgh, "the School of Arts was opened for the better education of the mechanics of Edinburgh in such branches of physical science as are of practical application in their several trades." The origin of the school is traced to an accidental conversation between a fellow of the Royal Society and a watchmaker upon the

¹ See Tables 11 and 12.

² Whitaker's Almanac, 1915.

lack of opportunity for young men taking up the latter's trade to secure teaching in mathematics owing to the conflict of working hours with school hours. With the exception of Dr. Birkbeck's class conducted incidentally in connection with Anderson's University in Glasgow, the Edinburgh School of Arts claims to be the—

first institution in Great Britain to provide evening instruction of a practical kind for artisans, and to be the first institution in Great Britain which was founded for the express purpose of giving education in the principles of science to the industrial classes.¹

From this school has risen the present Heriot-Watt College.

The Mechanics' Institute movement took a deep hold of Manchester with the founding of an institution there in 1824. It was a fine example of these institutions, which were rapidly established throughout the Kingdom and were especially successful in manufacturing districts, particularly in Lancashire and Yorkshire. These institutes were pioneers in promoting popular lectures and industrial and fine art exhibitions, and in a measure supplied the deficiency in opportunity for elementary and secondary education. By the help of the City and Guilds of London Institute, in 1883, the Manchester institution developed into the Manchester Technical School, extended in 1886 to include a junior technical school. The latter "was the first serious attempt made in this country to provide, for boys between 13 and 15 years of age, a department for manual training on the lines of the American manual training schools."²

The distribution of nearly \$4,000,000 a year out of the "Whisky money" (act 1890) by the Government for the promotion of technical instruction throughout the country resulted in a new development of mechanics and similar institutions, and in Manchester in the transformation of the technical school into the Municipal School of Technology. The city has sought to make the school one of the best in the world, and has profited by committees of inquiry sent to the Continent and the United States. Finally, by the cooperation of the school with the University of Manchester in forming a faculty of technology such a stage of development was attained that the reports of the board of education in 1912 for the first time included the school of technology among the university institutions of the country. Thus we have the well-known quartette of British university institutions which are primarily concerned with technology—the Royal Technical College, Glasgow; the Heriot-Watt College, Edinburgh; the Manchester Municipal School of Technology; and the Imperial College of Science and Technology, London.³ The first three repre-

¹ "Heriot-Watt College, Edinburgh, calendar," 1913-14, p. 14.

² "Prospectus of University Courses in the Municipal School of Technology, Manchester," 1913-14, p. 6.

³ Garnett, Prin. J. C. Maxwell, "An inaugural address delivered to the students in the School of Technology, Manchester, 1912," pp. 11, 12.

sent the fullest outcome of the Mechanics' Institute movement. The last, as we have seen,¹ that of the great exposition of 1851, a movement strengthened by German competition and influence. The development of these representative technological colleges and their recent association with universities would seem to make an exception to the dictum that all great educational movements come from above. This upward movement, including the pressure of the numerous technical schools of lower grade demanding recognition of their preparation of students for the universities, has opened or extended technological curricula in every British university. On the other hand, the technical colleges of university standing and the technical schools that might be ranged as secondary schools both carry a great amount of work, and with a majority of their students in the lower grades. The number of pupils and the amount of work below university level fill the eye of the casual observer to the neglect of higher technical education.

The upward development of the Mechanics' Institute movement issues in the technical colleges, and in the prominence of technology in the universities.

One discovers in unabated strength the spread of the original institute idea in a no less valuable way, first in Birkbeck College, and then in the numerous polytechnics and evening classes of which it was a precursor.² Primarily the polytechnics were intended to train the industrial classes at small expense, and to produce skilled craftsmen or artisans, and not to prepare students for the universities. The rapid growth of polytechnics and the success of technical evening classes, throughout the country, are no less conspicuous than the development of higher technological education. The foreign observer, impressed by the achievements in technological education in Germany, has been apt to overlook what has been accomplished in Great Britain and the promise in the alliance of technological faculties and schools with universities.³

¹ Cf. p. 78, *passim*.

² Cf. Ch. II, "Scotch Universities," p. 58, footnote on Dundee Technical College.

³ Cf. Ch. XIV, "Applied Science and Professional Education."

Chapter VII.

AGRICULTURAL COLLEGES AND SCHOOLS.¹

There is some reason for thinking that the tardy evolution of agricultural education in Great Britain has been educationally a gain. The subject has been taken up since agriculture has been recognized as the application of many sciences and not merely the teaching of the craft of farm work. The spread for a generation of the study of the sciences and the victories of science have prepared the way for the immediate admission of agriculture to the rank of a university discipline. It profits by many crude experiments in agricultural education made earlier and in America. It is classified as an extension of technical and professional education.² It is fitted in to the general educational system and not organized separately in the elementary or university grade of instruction. There is little or no attempt to infuse it into the elementary schools, and there is no thought of segregating it from the universities. On the contrary, the scheme is to ally it with the universities.³ Agricultural colleges or schools are set up as technical schools, the colleges in a general way correlative with the older technical colleges, and the lower schools with polytechnic institutes.

It may be said without offense that America has not much to learn in agricultural education from Great Britain.⁴ Some hints, however, may be gained, especially in view of recent movements, since agricultural education was transferred from the board of agriculture in Scotland to the board of education, and, curiously enough, the process reversed in England by its transfer from the board of education to the board of agriculture and fisheries.

Historically, Scotland has the priority over England in this field. Though Sir Humphrey Davy lectured in London on the application of chemistry to agriculture, and published the first well-known English work on agricultural chemistry at the beginning of the nineteenth century, a chair of agriculture was established in the University of Edinburgh in 1790, and two years later Sir William Fordyce, M. D., bequeathed to Mareschal College, of Aberdeen, \$5,000, to

¹ See Tables 11 and 12.

² Cf. Ch. XIV, "Applied Science and Professional Education," p. 205, *passim*.

³ Cf. Ch. II, "Scottish Universities"; XIII, "Coordination of Institutions."

⁴ Cf. p. 122.

found a lectureship in chemistry, natural history, and agriculture. The first lecturer on this foundation was appointed in 1840. About this date a widespread interest in agricultural science, under the influence of Liebig's writings on chemistry and agriculture, and the rise of the industry in artificial fertilizers, brought a revival in agricultural education in Europe which reached America by the next decade. There the movement persisted, speedily recognized in the sixties by the Federal Government through the Morrill Act. Thereafter it went forward by leaps and bounds. In England, the Royal Agricultural College at Cirencester, and the earliest of the world's agricultural research stations at Rothamsted, privately founded and supported by Mr. Lawes, afterwards Sir John Lawes, are the notable monuments of the period.¹

The movement languished in Great Britain without national recognition and aid. It had to wait for a series of parliamentary acts looking toward the development of a national system of education.² Not until 1885 was the first school for higher agricultural education organized in Britain. This was the Edinburgh School of Agriculture. In 1886 the University of Edinburgh became the first British institution to institute a bachelor-of-science degree in agriculture.

In 1886 the Glasgow and West of Scotland Technical College, now the Royal Technical College, instituted an agricultural department. In 1899 this was amalgamated with the Scottish Dairy Institute, Kilmarnock, and set off, under a separate board of governors with representatives of the technical college, as the West of Scotland Agricultural College.

In 1900-1901 the Edinburgh school, supported by the southeast counties, became the Edinburgh and East of Scotland College of Agriculture. The University of Aberdeen developed about the Fordyce lectureship an agricultural department and instituted a degree in agriculture. The Scotch education department, having taken over the educational work formerly carried on by the Scotch board of agriculture, secured the cooperation of all the counties north of the areas organized under the Edinburgh and Glasgow colleges in support of a college centered in Aberdeen, namely the North of Scotland College of Agriculture, founded in 1904. Scotland therefore has now its own national system of agricultural education. The country is divided into three provinces, each of which has as its center a college of agriculture, at the seat of a university, with which it is associated, and through which degrees are conferred. In addi-

¹ Hendrick, James, first Strathcona-Fordyce professor of agriculture, University of Aberdeen, "Inaugural Address. The Progress of Agricultural Education in Scotland," 1912, *passim*.

² Acts like that of 1889 organizing the board of agriculture, the excise and customs act ("beer or whisky money"), 1890, the appointment of the royal commission on Scottish universities, 1889, the development and road improvement funds act, 1909, etc.

tion to the central class work done in the university or in the college of agriculture, and the training of teachers of agriculture, there are various kinds of extension work through all the counties. This work consists of field experiments carried on by the college with the aid of advisory committees and farmers, school and demonstration gardens used by the college staff of county organizers as demonstration centers for teachers, lectures, demonstrations, systematic courses of extension instruction, and visiting for advice with individual farmers. The Scotch higher agricultural education rejoices in an organization which reaches every part of the country. It is now studying how to develop further a graded, coordinated system crowned by experimental stations or institutes for research. The ideal is not that of a big college of agriculture with an extensive curriculum for a general education. They hold that only a comparatively limited number really need higher agricultural education. Prof. Hendrick says:

It is the province of the central classes of the agricultural colleges to train those who are to be teachers and experts in agricultural science, those who are to be the leaders and captains in agricultural industry in its many ramifications, and those who are to have the control and management of the land.¹

For those who do not require these higher courses, shorter and simpler courses are supplied, chiefly in some form of college extension. He holds true to the thought of a college of agriculture as a strictly technical and professional institution, analogous to a medical or engineering college. Like every college, it should train brains and character, but it supplies this training chiefly through those sciences which bear on agriculture. Neither is it a prime aim of the college to teach the practice of agriculture. The practice is best learned by work on a real farm, for which no model or school farm can well be substituted. So strongly are the British colleges opposed to the popular misapprehension that the colleges exist to make farmers by their instruction that most of them insist upon at least a year's work upon a farm as a condition of admission. They are there not to make but to teach farmers what can not be learned in practice. The mission of the college in practice is in its extension work, by demonstration of improved methods on demonstration farms or in experiment stations.

In England and Wales the board of agriculture aided by the development commission funds has laid down a scheme for the co-ordination of the work of agricultural education largely along the lines of the Scotch plan but upon a vastly larger scale.²

¹ Hendrick, *supra*, p. 17.

² Bd. of Agric. and Fisheries and Bd. of Education. Sixth Rep. of the Rural Educ. Conf. "Coordination of Agricultural Education, 1912" (Cd. 6273), pp. 3, 4, 8, 11. Cf. Departmental Committee on Agric. Educ. in England and Wales, Rep. (Cd. 4206); Evidence (Cd. 4207), 1908; Rep. Bd. of Agric. and Fisheries on the Distribution of Grants for Agric. Educ. and Research in 1908-9, 1909-10 (Cd. 5888), 1910.

At the beginning of 1912 the first step toward coordination was taken by the board of education in transferring the responsibility for farm institutes as well as for the agricultural work of universities and colleges to the board of agriculture for the purposes of the development fund.¹ The scheme divides England and Wales into 12 educational provinces, 11 of which are already in operation. Each province has an agricultural college or a department of agriculture of a university or university college as its educational center. The province consisting of a group of counties is the unit. In each of the provinces is established an advisory council composed of representatives of the university or college, of the local education authorities, and of the board of agriculture, linking together the different institutions and bodies concerned. The board also intrusts the general supervision of the live-stock improvement schemes to the advisory councils.²

In Commissioner Hall's³ outline of the scheme on the educational side, he places research at the top in the ten or dozen research institutes, generally attached to a university, and each with a subject allotted to it. Their results are to be communicated to the farmers through the colleges. The colleges give the long courses of instruction suitable for future land owners, large farmers, land agents, teachers, and other officials. Farm institutes are being set up for small farmers and their sons. Demonstrations and advice are brought to their doors by itinerant instructors and organizers.

Between the farm institute and the primary school Mr. Hall found a notable deficiency in rural education. He would fill it by the rural continuation school for the boy between the ages of 14 and 18. Below the continuation school, in the elementary school, Mr. Hall felt agricultural education had little place, though nature study was a step in the right direction. "The less the schoolmaster meddled with agriculture the better." This coincides with the Scotch experiment of some years ago, when a large number of rural teachers with a certain amount of training in the elements of agricultural science started many agricultural classes in their schools. The effect was disappointing or worse, leading to hostility toward or contempt for agricultural education, according to Prof. Hendrick.⁴ On the other hand he commends the incoming continuation classes conducted by the county staff of the agricultural colleges.

¹ Memorandum of revised arrangements between the board of agriculture and fisheries and the board of education in regard to agricultural education in England and Wales. Cf. Memorandum of arrangements between the boards in 1909 (Cd. 4886).

² Bd. of Agric. and Fisheries An. Rep. on the Distribution of Grants for Agric. Educ. and Research (Cd. 7179), p. X.

³ Hall, A. D., Commissioner of the Development Commission. Paper before the Teachers' Guild of Great Britain and Ireland. *The Times*, Jan. 7, 1914.

⁴ Hendrick, *supra*, pp. 12, 16.

The scheme of the board of agriculture under research includes two minor proposals, namely, the award of research scholarships of which the main object is to provide trained men for the research institutes, and the provision to assist special pieces of research work outside the scope of the research institutes.¹

This complete scheme, still in its formative period, for agricultural education in England and Wales, while a native growth adapted to the peculiar needs of the country, reflects the influence of the study of continental and American agricultural systems of education. It is strongly confirmatory of the main features of Federal Government aid and inspection, cooperating with State and local control.

The use made by the board of agriculture and fisheries of organized bodies to give official advice and to aid in coordinating all interests, raises the query, might not something more be done in a similar way by our Federal Department of Agriculture, the Bureau of Education, and our State educational authorities.

The board of agriculture has constituted an agricultural education conference of 44 members, of whom 6 are nominated by the board, and the others are representatives of the provincial councils, of the universities, of university and agricultural colleges, and of national agricultural societies, to discuss and to advise the board upon questions connected with agricultural education.²

The scheme includes advisory councils for agricultural education in each of the 12 areas or provinces. These advisory councils, established in 1912-13, consist of representatives of each county council in the area of the central university or college and of the board of agriculture. The functions of an advisory council are to consider the needs of the area as a whole and to advise the local education authorities thereon, in order to coordinate the work of agricultural education in the counties and the work of the collegiate centers and to advise the board on the state of agricultural education in the area.³ Might

¹ Fourth Report of the Development Commissioners, 1913-14 (441), pp. 7, 8. The research institutes and the subjects assigned to them at present are as follows: (a) Plant Physiology.—Imperial College of Science and Technology. (b) Plant Pathology.—Royal Botanic Gardens, Kew. (c) Plant Breeding.—Cambridge University. (d) Fruit Growing.—The University of Bristol (with which has been associated the National Fruit and Cider Institute at Long Ashton), and a subsidiary station in Kent in connection with the Southeastern Agricultural College. (e) Plant Nutrition and Soil Problems.—Rothamsted. (f) Animal Nutrition.—Cambridge University and Leeds, by cooperative scheme. (g) Animal Pathology.—The Royal Veterinary College and the veterinary laboratory of the board of agriculture and fisheries. (h) Dairy Investigation.—University College, Reading. (i) Agricultural Zoology.—The Universities of Manchester and Birmingham—the former taking economic entomology, and the latter helminthology. (j) Economics of Agriculture.—The University of Oxford.

² Bd. of Agric. and Fisheries Ann. Rept. of the Educ Branch, 1913-14 (Cd. 7450), p. 139.

³ Bd. of agriculture and fisheries memorandum as to the constitution of the advisory councils, etc. (Cd. 7118), 1913.

not something analogous to these advisory councils be found serviceable to State and Nation in the United States?

The annual report of the education branch of the board of agriculture and fisheries for the year 1913-14 shows some 500 persons engaged in teaching agriculture or investigating agricultural questions in England and Wales. Grants amounting to \$95,000 were paid to 20 colleges and other institutions.¹ The number of students at these institutions in 1912-13 was 1,839, of whom 570 were in short courses. These figures are indeed small, compared with corresponding figures in the United States. One must remember the very recent national organization of higher agricultural education in the island, and the predominance of commerce and manufactures, and be encouraged by the soundness and promise of the plans proposed. There are yet several items which may have profitable lessons for us.

Superintending inspectors of the education branch of the board visit the institutions receiving grants and make full reports upon them. Might not the Department of Agriculture and the Department of the Interior, through the Bureau of Education, well have a more regular inspection of the institutions receiving moneys from the United States Government? The board makes grants for the provision of technical advice for farmers and the investigation of local problems through a special advisory staff at selected colleges. Might not the American colleges well give more attention to this feature?

The board last year tried an educational experiment in the form of a temporary residential farm school. A month's training and lectures were given to 20 selected lads between the ages of 16 and 21, in a hired house with a village hall for a classroom. This makes an inexpensive and movable educational feast with the benefits of residential school life accessible to the farm boy who could not afford to attend the short courses at the college. In addition to research institutes, the board from year to year makes special research grants to individuals in aid of the investigation of specific problems. The English habit of recognizing individuals outside of institutions and associating them with the institutions deserves notice amidst the tendency to intense institutionalism in America.

The specialization of institutions recommended to the board by the rural education conference² is a point to be pressed home on the American agricultural colleges. Every institution should give special attention to the particular branch of agriculture, e. g., dairying,

¹ Ann. Rept., supra (Cd. 7450). The institutions were: *Universities and university colleges*—Aberystwith, Bangor, Cambridge, Leeds, Manchester, Newcastle-on-Tyne, Oxford, Reading. *Agricultural colleges*—Cirencester, Holmes Chapel, Kingston, Newport, Swanley, Uckfield, Wye. *Special institutions*—British Dairy Institute, Reading; Harris Institute, Preston; National Fruit and Cider Institute, Long Ashton; Royal Horticultural Society's School, Wisley; Royal Veterinary College, London.

² Bd. of Agric. and Fisheries and Bd. of Educ. Fifth Rep. of the Rural Educ. Conf. Courses in Agric. Colleges (Cd. 6151), 1912, pp. 6-8.

horticulture, forestry, chiefly practiced in the district. Moreover, it should be recognized that there should be agricultural colleges of different types ministering to the class of students in their constituency. An English example is the University of Cambridge department of agriculture. Prof. Wood testified there is—

a great difference between the Cambridge school and a residential agricultural college * * *. Intending farmers and land agents formed only a small proportion, say one-tenth of the total number of students attending the school * * *

Broadly speaking, the school is attended by two classes of students: (1) Future landowners who came to Cambridge to finish their education and took advantage of the existence of a school of agriculture to attend the lectures provided there; and (2) men who had taken the natural sciences tripos and then decided to study for Part 11 of the diploma in agriculture.¹

Quite a different type of agricultural college is represented by the agricultural department in Leeds. Prof. Seton says all branches of the work are provided for by the university, and the staff not only are concerned in the in-university instruction, but also in the instruction given in the county. At the university there are three courses of study—one for the degree of B. Sc. (Agriculture), one for the national diploma in agriculture, and a general course designed without any reference to the requirements of an examining body. Outside the university, county lectures are given. Training courses in the subjects of experimental plant physiology and horticulture have been conducted for the benefit of teachers introducing the subject of gardening in the elementary and other schools. At the university farm there are experiments and demonstrations for university students and parties of farmers. There are experiments with crops on demonstration plats at selected centers in the county. Members of the staff give technical advice to farmers. There is provision for the testing of seeds and milk. The college is cooperating with the farm institute and improvement of live-stock schemes of the board of agriculture. The university has been recognized by the board as an institution for research in animal nutrition, as well as the University of Cambridge.

Leeds and the University College, Reading (which has converted the department of agriculture into a faculty), represent what might be known as the all-round type of agricultural college, not unlike the common American pattern. The more common type of English agricultural college represented by the Royal Agricultural College, Cirencester, and the college at Wye, might be described as intensive colleges with three-year courses to prepare students for estate management and forestry or for farming on a large scale or in the colonies. They also have short courses. A third type, represented by the Harper Adams Agricultural College, is intended primarily

¹ Supra (Cd. 6151), p. 19.

to educate farmers' sons and to make farmers. They have certificate courses of two years, diploma courses of a more advanced character, and short courses. Only six of the institutions aided by the board prepare for the degree of B. Sc. It is evident that there is room for at least these three types of agricultural colleges, of equal value in their way, and that the university college type should be at the seat of a university.

It is especially noteworthy that none of the agricultural colleges embrace any extended courses in engineering. They only take up farm machinery and surveying. So high and wide to their minds is the scope of agriculture that they feel compelled to concentrate their studies upon the sciences pertaining to it and the applications in their field. They see the wisdom of maintaining a strictly technical school instead of a polytechnic.

The latest item of interest in agricultural education, just before the outbreak of the war, was the holding of the International Congress of Tropical Agriculture in London (June, 1914). Attention was called to the need of educating Europeans to fill responsible positions in the Tropics. The founding of an agricultural college in the Tropics is advocated, to which men with the diploma of an agricultural college at home could proceed. Such a college should also become a most important center of tropical agricultural research. Ceylon and the West Indies were suggested as sites for the college. The opportunity for such a tropical college, at least for the Western Hemisphere, ought not to be lost sight of by American agricultural colleges and experiment stations and the governments, especially in the Southern States and possessions.

One of the first fruits of the war is a realization of the necessity of making more of instruction in forestry.¹ The almost prohibitive prices of wood and timber have brought home the practically complete dependence of the country on foreign supplies, despite the fact that with proper afforestation the nation could almost meet its own demands. The attention hitherto given to the Indian and colonial forest services, particularly in the Cambridge and Oxford schools of forestry, is likely to be extended to home service. The new buildings for forestry recently erected at Cambridge and Edinburgh, aided by appropriation from the development commissioners and a grant for a forest garden, portend further contributions. The diplomas in forestry at Cambridge and Oxford and the institution of the degree of B. Sc. in Forestry in 1906 by Edinburgh, now followed by Aberdeen, give promise for the future.

The courses in forestry at Bangor, Newcastle, and Cirencester, like those in the schools of forestry, recognize the economic as well

¹ Cf. the Times Ed. Sup., "Schools of Forestry," July 6, 1915.

as the technical aspects of the subject. In like manner the war has emphasized the importance of increasing the supplies of home-grown food, which redounds in favor of agricultural education. The board of agriculture is seeking to organize local committees to give advice to farmers. Local farmers are persuaded to give experimental courses in rural schools, e. g., milking, poultry farming, etc. Cooperative societies of farmers are increasing. County education committees assist in all these things, even to providing demonstration plats and training agricultural workers, including women, in the lighter forms of work. School kitchen gardens are being made an adjunct to cookery classes.

Among the points emerging worthy of American consideration are that the management is local; the instruction is in the practice or art of agriculture, given not by schoolmasters but by actual farmers, and tending to create a universal interest at little expense and in time to increase the support of the work of the agricultural colleges.

Chapter VIII.

WOMEN'S COLLEGES.¹

The story of the higher education of women in Great Britain is relatively that of the "short and simple annals of the poor," but illustrative of one of the greatest Victorian movements. It may throw some light on questions in debate with reference to collegiate education in the United States. There are five types of institutions for the collegiate education of women in the Island. In the order of time they are, first, the independent college, using the word "college" as it is used in England, to cover various grades of education above the elementary, represented by Queen's College, London, the first college founded for women in Great Britain. Second, the university college, represented by Bedford College, London, the first of the present university colleges opened for women. Third, the university annex college, the first of which was Girton, Cambridge. Fourth, the college incorporated in the university, represented by Queen Margaret College, Glasgow, or King's College for Women, London. Fifth, the unrestricted coeducational institution, the first of which was University College, London, and represented also by the Scotch and new universities.

The founding of Queen's College in 1848 marks the first stage in the higher education of women in Britain. The finishing schools, which gave the fashionable education of girls which Charles Lamb called "the female garniture which passeth by the name of accomplishments," could not satisfy the rising thought and activities of the early Victorian period. A woman was on the throne. It was the year of revolutions in Europe. Further reforms than those of the Reform Bill of 1832 were impending in England. The refrain was, "the old order changeth, yielding place to new." It was the time of the rich aftermath of the literary revolution of the beginning of the century in England, and of a new literary era. Tennyson was about to succeed Wordsworth as poet laureate. "The Princess" had just staged the "college woman," since then a perennial character in tragedy and comedy. The full advent of woman in literature was come. Elizabeth Barrett Browning, Mrs. Gaskell, and the Brontës were writ-

¹ See Tables 13 and 14.

ing. The education of girls carried on chiefly in the home, in the three R's and the accomplishments, by governesses, began to call for a better educated governess. In 1848 the Governess's Benevolent Institution made arrangements with "professors of high talent and standing in society to open classes in all branches of female education." They got permission to give this branch of their work the name of Queen's College. The spirit of the age was brought to bear upon them by helpers like Charles Kingsley, one of their teachers, and F. D. Maurice. The latter gave the inaugural address for the college. "At that date even the name of 'college,' as associated with women, seemed to require apology."¹

It is proposed to open a college in London for the education of females. The word "college" in this connection has to English ears a novel and ambitious sound. I wish we could have found a simpler one which would have described our object as well. * * * We are not devising a scheme to realize some favorite theory, but are seeking by humble and practical methods to supply an acknowledged deficiency.

In the characteristic English way, though it was an epoch of agitation and theories, the college, like its successors, had a practical and not a theoretical origin.

Cheltenham Ladies' College, founded in 1854, is another college of this type. They represent the transition from instruction by governesses or the old-time "finishing school" to the school seeking to preserve the accomplishments in combination with the elements of a modern scholastic discipline. Incidentally they may prepare students for university matriculation or degree examinations. The word "ladies" in the title is significant of the purpose they would specially fulfill and the class they would serve. Candidates for admission have "to give references in regard to social standing." Cheltenham covers the work of every grade of instruction. It has a kindergarten for boys and girls under 8; a lower school for pupils from 8 to 12; a middle school for pupils from 12 to 15; an upper school for pupils from 15 to 18; university classes for those working for degrees of the University of London or for the Cambridge higher local examinations. There are also post-school classes in home science, music, and art.

The first women's colleges were meant to be grammar and "public schools" for girls, corresponding to those for boys. Their continued success justifies them, though over 300 girls' secondary schools, and notably those of the girls' public day school trust, have risen since they were founded. They may well show that there is also a place in the United States for the best type of girls general and preparatory boarding school outside the public school system.

¹ Davies, Emily, LL. D., "Thoughts on Some Questions relating to Women," 1860-1908, with prefatory note by E. E. Constance Jones, mistress of Girton College, Cambridge, 1910, p. 159.

Bedford College, founded in 1849, only a year later than Queen's, has been mentioned as now a representative of the university college. There is no evidence that at that time it was consciously preparing the way to open universities to women. Its aim was to offer opportunities of higher education. From the beginning its curriculum included Latin, mathematics, and natural science, and from 1875 Greek. Bedford College is a monument to the first foundress of a college for women in England, though for centuries women had been founders and benefactors of institutions for men. The generosity of Elizabeth Jesser Reid enabled the college to open. The aims and atmosphere of the school may be gathered from the name of Erasmus Darwin among the promoters, and of Anna Swanwick, "George Eliot," and Jane Martineau among the first students. George Eliot, then 30 years old, like others of mature age, availed herself of this first opportunity for higher education. It is suggested also they may have desired to set an example to help others to overcome the prejudice of the time against a woman's going to college.

The college, first cradled in a private residence, was housed in a series of residences, until, by gifts amounting to \$650,000, and the aid of the lease of a site in Regents Park from the Crown, the event of 1913 in the world of woman's education was the opening of the commodious buildings of the college by Queen Mary. The event in the same world in 1914 was the gift to the endowment fund of \$525,000. In 1900 the college was recognized as a school of the University of London. In 1913 it was recommended by the royal commission as worthy of becoming a "constituent college" of the university. It has been recognized as a university college by the board of education, and receives the largest grants from the treasury of any woman's institution, and also a grant from the county council. Its students are working for degrees "with a definite purpose and post in view." The college holds before them the demand for better-trained women not only for teaching, but for the 80 other professions for women scheduled in the "English Woman's Year-Book."

The Royal Holloway College, opened in 1886 by Queen Victoria, the gift of Thomas Holloway, at a total cost of \$4,000,000, belongs in the group of independent university colleges. The founder designed "to provide education of a university character for women of the middle and upper-middle classes." It is recognized as a school of the University of London in the faculties of arts and science. It is intended for resident students and has complete accommodation for about 200 of them. In a suburban location, 19 miles from London, and receiving no State aid, it fills a not uncommon American ideal for such a college. The success of the colleges of this type in reincarnating the medieval benefactor, in attaining university stand-

ards, and in retaining the best features of the corporate or ancient collegiate life, as well as the work of their graduates, vindicates their existence among the other types of the separate women's college.¹

The university annex type of college stands at the end of a long and tortuous path of agitation and effort. The bold idea of opening the university to women was not entertained at first by the originators of the two groups of colleges we have described. The question was first raised in 1856 by a brave woman who applied for admission to the examination of the University of London, then only an examining body. It was decided that it was not legally possible to admit a woman under the charter. In 1862 a proposal to obtain a modification of the charter of the university to make it possible to admit women was rejected by the casting vote of the chancellor. It was followed by the formation of a committee for obtaining the admission of women to university examinations. In 1864 the report of the royal schools inquiry commission referred with approval to the proposal for the establishment of a new college "designed to hold, in relation to girls' schools and home teaching, a position analogous to that occupied by the universities towards the public schools for boys."²

The committee first succeeded in securing a private or unofficial examination of girls simultaneously with that for boys by the Cambridge local examinations syndicate in 1863. At the same time the committee corresponded with the secretary of the Oxford local examination delegacy, but were discouraged from making any formal application.³ By 1866 the local examinations of Cambridge, Edinburgh, and Durham were opened to girls.

Under powers given in the supplemental charter of 1867 to the University of London, women were not rendered admissible to the ordinary examination, but two forms of certificate were offered to female students, the one of general and the other of higher proficiency.⁴

The scheme was not successful. Associations in various parts of the country for improving the education of women were active in seeking the admission of women to the universities as candidates for degrees. The University of London in 1878 received a supplemental charter empowering it to make every degree, honor, and prize of the university accessible to women on equal terms with those to men. It

¹ The London (Royal Free Hospital) School of Medicine for Women belongs in this group. Founded in 1874, it deserves mention as the first medical school for women. It provides for the full training of women for the medical profession and is recognized as a school of the University of London. In 1912-13 the number of students was 183. The only other semi-independent medical school for women is in Edinburgh. Queen Margaret College, Glasgow, continues a segregated college incorporated in the University of Glasgow.

² Davies, Emily, *supra*, p. 90.

³ Davies, *supra*, p. 164.

⁴ University of London Calendar, 1913-14, p. 23.

was thus the first academical body in the United Kingdom to admit women as candidates for degrees. And so it came about that University College of the University of London was the first institution of university rank to open its doors to women upon the same terms as to men with the exception of the departments of anatomy and engineering.

The siege of the women against the old universities proceeded by slow approaches, eventually gaining the annex colleges at Cambridge and Oxford.¹ The first move, beyond securing the privilege of the Cambridge local examinations, was the opening of a college of instruction in a hired house at Hitchin, 25 miles from Cambridge. In 1873 this college, now known as Girton, was removed to the suburbs of Cambridge, at what was considered a proper distance from the men's colleges.

The second move made upon Cambridge was a memorial in 1868 to the university asking for advanced examinations for women, which were instituted in 1869. Lectures having these examinations in view were started in 1870, and in the next year a residence was opened for the women taking these lectures. Thus arose in 1875 Newnham Hall, now the college. At present Newnham College has four halls, each with its own head, dining hall, and common rooms. These units, susceptible of addition, have a common college hall, library, and grounds of 10½ acres. Girton does not have a series of halls and has one great dining hall and a chapel. Its grounds cover about 33 acres. Otherwise to-day there is no substantial difference in the colleges, though different in their origin. Girton was the outcome of the zeal of a group of earnest women who desired to have a college for women like those for men in the ancient universities. Newnham sprang up within a university circle, at first only desirous to secure the privileges of university lectures and examinations for women resident in Cambridge. Though the atmosphere of the colleges at the beginning was somewhat different, due to their different origins, the difference is slight to-day. Both the institutions are independent bodies and without share in the government of the university. They are places "at which women reside and are taught while passing through the university course." Their students are admitted to university examinations, and with the consent of the professors and lecturers in the university to their classes and laboratories; but they are not eligible for degrees, as this would make them members of the university with the right to participate in its government. At present the colleges are not agitating to secure degrees. The record of their students, who must be "honor students" to secure the certificates, have made the certificates almost equivalent to a

¹ Cf., University of London Calendar, 1918-14, p. 87.

degree. There is also a strong feeling that the university before long will find a way to give the degrees.

Oxford moved more slowly in recognizing the demands for the higher education of women, though now officially she has gone somewhat further than Cambridge, in that in 1910 she constituted a delegacy for women students. Through this delegacy the university confers the privileges of "recognized societies" upon women's colleges, and confers upon students on the books of recognized societies a privileged status as "registered women students." No student residing in Oxford may enter her name for any university examination in arts or music unless it is on the register.

The university has recognized four residential colleges—Lady Margaret Hall, founded in 1878; Somerville College, founded in 1879; St. Hugh's College, founded in 1886; St. Hilda's Hall, founded in 1893; in 1901 associated with St. Hilda's College, Cheltenham, under the title of St. Hilda's Incorporated College. These are residential colleges, independent of the university. Each has its own governing body. Like the colleges of the university, they fix their own conditions of admission and make their rules for internal discipline, which are in close general agreement. With the exception of Somerville, which is undenominational, "they are conducted on the principles of the Church of England." Each of the colleges has a number of scholarships, and Somerville a research fellowship. The colleges endeavor to maintain high standards and emphasize reading for honors.

The university also recognizes the Society of Oxford Home-Students, founded in 1879, under the auspices of the Association for Promoting the Education of Women in Oxford. It is comparable with the body of noncollegiate students for those not members of the colleges. It is under the care of a principal and committee for home students appointed by the delegacy for women students. It has no buildings of its own except a rented common room. It has approved St. Frideswide as a hostel for Roman Catholic home students.

To summarize, the women's annex colleges are peculiar to Oxford and Cambridge. They conform to the model of the men's residential tutorial self-governing colleges. They do not, however, belong to the university or share in its government. Their students are not at present admitted to membership of the university or to its degrees. They may enter for examinations qualifying for certain degrees and diplomas. If successful, they receive certificates in lieu of degrees. Though each college has its own staff of instruction, upon which are also lecturers from the university staff, and its own lecture rooms and library, the students also attend university and intercollegiate lectures with the men. They use the university libraries and laboratories. In these particulars there is absolute coeducation. The sepa-

rate college buildings and grounds and undergraduate societies effect segregation for social and athletic purposes.

The "recognized societies" are in general agreement with reference to social regulations for "registered women students." Some of these are in effect as follows:¹ The women students are not expected to enter into conversation with undergraduates attending the same lectures. They are not to go into colleges or lodging houses except with a chaperone approved by their principal. They may attend public entertainments and athletic events under conditions approved by their principal. They are not permitted to take long country walks or bicycle rides or to boat alone. They may receive calls from gentlemen who are known to their parents, but they must not walk, boat, bicycle, or go to cafés with gentlemen without an approved chaperone. They must consult the principal before accepting invitations for the evening or for luncheon, picnic, or for boating parties. Invitations to dances may not be accepted. These regulations are not resented, being in harmony with the long-established Oxford and Cambridge theory that the college stands in loco parentis. The prejudice on the part of the men students against the presence of women in the university has passed. Each sex goes its own way, taking very little notice of the other.

Of women's colleges incorporated in a university, Queen Margaret College, Glasgow, founded in 1883, is a capital example. In 1886 certain professors in the university, each making his own arrangements, began to give lectures to women, some of which were held in the university and some outside. In 1877 an association for the higher education of women was formed in Glasgow, and courses of lectures were organized by it, and were given in the university by permission of the senate. This association was incorporated in 1883 under the name of Queen Margaret College, the senate of the university appointing two members of the council of the college. The college, with its buildings, grounds, and endowments, was transferred to the university in 1892 on condition that these should be devoted to the establishment and maintenance of university classes for women exclusively. By this arrangement the teachers in Queen Margaret College were appointed by the university court and the students admitted as matriculated students of the university. Queen Margaret College is now the women's department of the University of Glasgow, the college as a corporation having been dissolved. The tradition of the college is kept by the "Students Union Association," composed of former students, to which the University is indebted for Queen Margaret Hall, Queen Margaret college settlement, and Queen Margaret college students' union. All women students are

¹ Cf. regulations for men in Ch. XVIII, "Student Life," pp. 240-241.

now required to matriculate at the college and to advise with the "mistress" of the college. A part of the instruction in arts and in the Queen Margaret medical college is given in the college hall and a part in the university.

The second instance of a college for women incorporated in the university, "King's College for Women," London, reversing the order of development in Queen Margaret College, began as a women's department of King's College in 1881, and was incorporated as a college in the University of London in 1910. In 1913 the university senate constituted a delegacy, separate from the King's College delegacy, for the government of King's College for Women. A new era has just been inaugurated for the college by the interest shown in the department of home science and economics and by gifts received for the endowment of a hostel to be called Queen Mary's Hostel, and the building and equipment of laboratories. The college confers a diploma in home science and economics for a one-year post-graduate course and a certificate for a three-year course. The college has a department of theology, a faculty of arts, and a faculty of science and home science. The principal officer and head of the executive work of the college is the warden. This does not apply to the department of theology, whose head is dean of the faculty in King's College for Men, though the warden has the superintendence of her students. The college has its own staff, of whom nearly half are members of the staff of King's College for Men. By a step just taken, the second and third year students in science attend lectures and laboratory courses at King's College for Men. This looks in the direction of coeducation in the form in which it appears in University College, London, and in the Scotch and new universities. It might be a step toward the fulfillment of the recommendation of the royal commission. The commission, in the interest of economy, wished to amalgamate the two King's Colleges and to exalt into a department of the whole university, under the name of household and social science, the college's department of home science and economics.¹

The year 1880 marks the time of the turn of the tide in the higher education of women and its sweep henceforth toward unrestricted coeducation in universities. In that year the Victoria University, Manchester, was founded, the first university in Great Britain and Ireland in its foundation charter explicitly providing that—

all the degrees and courses of study of the university shall be open to women,
 * * * and women shall be eligible for any office in the university and for membership of any of its constituent bodies.

In 1892 the commissioners appointed under the universities (Scotland) act of 1889 empowered each of the Scotch universities to admit

¹ Cf. p. 156.

women to graduation upon the same conditions as those for men. Men and women might be taught together in the same class or in separate classes. The four universities, having long been under the influence of associations for the higher education of women, and having met them as far as the law would allow, availed themselves of their new powers without delay.¹

After a struggle of three-score years, coeducation is firmly established in the field of higher education. This is the more remarkable since coeducation is little practiced and little tolerated in secondary education. Among the five types of coeducational institutions there is a distinct tendency for the last type evolved to prevail. The independent and isolated colleges are not multiplying, and, as with every other kind of school, all existing colleges tend to seek an affiliation or alliance with a university.

The success of coeducation has banished fears and silenced objections to the admission of women to university privileges. There is a steadily increasing number of young women attending the universities, due in part to the influence of the board of education in recognizing degrees and facilitating the arrangement of practically joint courses of study between the teachers' training colleges and the universities. The old-fashioned governess is passing, and the woman with college training and athletics is taking her place. Girls do not go to college because it is fashionable, but because they desire that kind of education. The increased activities of women in public affairs and in philanthropy are drafting a larger number of those who wish to qualify for such work to the colleges. A late movement in women's education is indicated by the avowed purpose to develop the department of home science and economics in King's College for Women, London, into a university department of household and social science² in order to train ladies who have no thought of bread-winning for the administration of the modern home on scientific principles, and for their mission as wives and mothers and their participation in the life of the community. The effeminization of the universities is not apprehended. There is a predominance of men, and masculine traditions are firmly established in student societies and sports. The women also are occupied with their separate societies, and in accordance with the habits of the English woman's out-of-door life have their own sports.

The presence of women has not affected the curriculum. The pre-established widened range of studies and freedom in choice of them

¹ In 1874 Edinburgh instituted a certificate for women; 1876, St. Andrews the title of L. L. A., cf. p. 56. Glasgow opened mixed classes in the university, while continuing separate classes in Queen Margaret College. The six new English universities, the Welsh, Irish, and in general the universities throughout the Empire, have adopted the policy of unrestricted coeducation.

² Cf. p. 155.

prevented this incidence of the advent of women. The segregation of the social and athletic life of the women in the university-annex colleges has resulted in genuine coeducation in all matters scholastic. One might say there is literally coeducation as distinguished from asexual education. The college incorporated in the university and the unrestricted coeducational institution are as rapidly as possible securing the benefits pertaining to the annex college, while retaining the advantages of equality, freedom, and inexpensiveness which they have. They are agreed in the necessity of having a woman and scholar as the head of the women's student body.¹ They are insisting upon approved lodgings and have accepted the principle of having residential halls or hostels, which they are erecting as rapidly as they can secure the funds.

The future of the higher education of women is assured. Women's colleges and university departments recently have received relative to their age and size the largest donations given to university education.² The new stage in the higher education of women will be safeguarded and promoted by the number of university women graduates and their organizations. The association of university women teachers, in 1913, numbering 2,717 members, is not only placing teachers in the Islands but also abroad, including the United States. Perforce it is influencing the standardizing of women's institutions throughout the English-speaking world by making a list of those whose graduates it will admit to membership. The federation of university women is raising funds for fellowships to be held by women graduates who have proved their capacity for research. University women now have greatly increased opportunity for research work and Government appointments. The annual reports of the central bureau for the employment of women carry the names of women having bachelor's degrees with honors in a variety of employments.

Women are not excluded from theological degrees. In 1915 the Archbishop of Canterbury, in addition to conferring diplomas on students who have been successful in his examination in theology, conferred upon two women licenses to teach theology.

The most significant event, to those who believe in the participation in government by women, was the admission, at the end of 1913, of "female graduates of Durham University to membership of convocation on the same terms and conditions as men." Inasmuch as

¹ The title "dean of women" is not used, but warden, mistress, senior tutor, or principal.

² Cf. Bedford College, London, \$1,175,000; King's College for Women, London, Home Science and Economics, \$700,000; the erection of women's buildings or hostels at almost every Scotch and new university; Somerville fund for new buildings; the payment of the debt of Girton, \$120,000; halls of residence, Reading.

Durham has been grouped with Oxford and Cambridge, and the refusal of the last two universities to admit women to their B. A. degree has rested primarily upon that degree opening the way for women to sit in convocation and the government of the university, this triumph of woman at Durham may portend much.¹

¹ The approximate number of women students attending universities and university colleges in 1912-13 was as follows: Oxford, Cambridge, and Durham, 932; London (matriculated students), 1,442; the six new English universities, 1,741; English university colleges, 566; total English, 4,681; total Scotch, 1,882; total English and Scotch, 6,563.

PART II.—TOPICAL STUDIES AND SUGGESTIONS.

Chapter IX.

ORGANIZATION AND ADMINISTRATION OF UNIVERSITIES.

There are four distinct species of university organization in England and Scotland. They are those of Oxford and Cambridge, of the Scotch universities, of London, and of the new universities. These species are clearly descended from a common medieval genus. In individual institutions of the same species there are varieties, and variations in terminology for practically the same thing. There are four parts in common in the organization of all the four species. The headship consists of a chancellor, a vice chancellor or principal, and other administrative officers.¹ Second is a small executive body with which the headship is associated, known at Oxford as the hebdomadal council, at Cambridge the council of the senate, in Scotland as the university court, in London as the senate containing three councils, in the new universities as the council. Third, comes the academic body called in Oxford the congregation, in Cambridge the electoral roll, in Scotland the *senatus academicus*, in London the academic council as a part of the senate, in the new universities the senate. The fourth body is an organization of the graduates, at Oxford the convocation, at Cambridge the senate, at London and the new universities the convocation, in Scotland the general council. In the Scotch universities a fifth and a sixth part were related to the first four under the universities (Scotland) act of 1889. In view of parliamentary appropriations the Scottish universities committee of the Privy Council was constituted, to whom reports are made. The students' representative council was also recognized, which, through the rector and by advice concerning his assessor, virtually has two representatives on the court.²

In the new universities, in view of their aid from the State, municipalities, public bodies, and donors, a numerically large body known as the court of governors, and nominally the supreme governing body, became the fifth part of the organization.

¹ Cf. Ch. X, "University Officers," pp. 170, *passim*; 175 *passim*; 180.

² Cf. Ch. X, "University Officers," pp. 174-175; XVIII, "Student Life," pp. 246-247.

Oxford, Cambridge, and the Scotch universities have largely kept unobscured, despite the occasional intervention of the State, the original model of a university, namely, a self-governing guild of masters and scholars possessing many rights and privileges from church and state, a corporation making its own plans, without let or hindrance, in the pursuit of learning and the management of its finances. Oxford and Cambridge have become practically an estate of the realm, with complete autonomy, excepting that statutes have to receive the approval of the King in council. So strong are the traditions of the necessity of autonomy in universities, in the interests of political and intellectual freedom, that the plan of government of the new universities is designed to forefend against direct municipal control.¹

It may be sufficient for our studies to notice the latest changes and tendencies in council, congregation, and convocation, using the Oxford nomenclature for the essentially same parts of organization in the different universities.

The council at Oxford, the supreme governing organ of the university, succeeded in 1854 the old hebdomadal board, composed entirely of heads of houses and the proctors, which had existed from 1631.² The council consists of the chancellor, vice chancellor, the ex-vice chancellor, 2 proctors, and 18 members elected by congregation for six years in three orders of six each. The orders are composed of heads of houses or halls, professors, and members of convocation of five years standing. From these 18, half retire (but are reeligible) at the end of three years.

The constitution of the council at Cambridge is on the same plan with the three orders. The functions of the councils have been to manage both the educational and business sides of the universities. The initiative of legislative proposals has been limited to them. Organized agitation for reform of the council took shape in 1909 and 1910 in both the universities. As the reform in the sixties of the hebdomadal board at Oxford and of the "caput" at Cambridge was intended to liberate from the autocracy of the heads of houses and to strengthen the professoriate, the feeling of the present agitators has been that the existing government is still too oligarchical and not sufficiently representative of the wide range of studies or an efficient organization financially.

The efforts of the reformers centered upon the abolition of the three existing orders, throwing open the entire 18 places to election by congregation or senate.³ The main reasons adduced were that

¹ Cf. Ch. XII, "State Aid and Visitation."

² Curson, "Principles and Methods of University Reform," *supra*, p. 22, *passim*.

³ Curson, "Principles and Methods, etc.," *supra*, pp. 22-27; Curson, "Report of the Hebdomadal Council," p. ix, 8; "Oxford University Gazette," May 7, 1913, pp. 735-736; Tillyard, *supra*, pp. 843-844.

persons fitted for the work and available for any section of the university rather than classes should be chosen. It was believed that a fair proportion of heads of houses and of professors with qualifications for the work of the council would be elected.

The Oxford reformers have succeeded in extending the power to initiate legislation outside the council.¹ In the direction of efficiency the reformers have succeeded in securing a reconstitution of the faculties and boards of faculties and in the establishment of a general board of the faculties, relieving the hebdomadal council of the greater part of the business connected with curricula and examinations and unifying the policy and administration of the several boards of faculties and the university and college teaching.²

A far-reaching reform was the establishment of a finance board which presented in November, 1913, to the council its first "Consolidated Statement of the Receipts and Expenditures of the University and Its Departments" and a "Summary of Receipts and Payments of Colleges" for 1912.³ This was the first fruits of a coordinated financial policy in the university and the colleges and of the aim to secure something like a uniformity of accounting. The board is intended to unite the financial with the executive and administrative functions of government and to prepare an annual budget for the council.

Corresponding to the Oxford and Cambridge councils is the university court in the Scotch universities. The court, ordinarily numbering 14, consists of the rector and his assessor, the principal of the university, the provost of the city and an assessor nominated by him conjointly with the magistrates and town council, an assessor nominated by the chancellor, four assessors elected by the general council, and four assessors elected by the *senatus academicus*, and a possible four representatives of affiliated colleges, should there be such.⁴ This court of 14 or 15 members, first established by the universities act of 1858, has power to review all the decisions of the senate, to appoint and dismiss the teaching staff, and to alter or revoke rules and ordinances, with the written consent of the chancellor and with the approval of the King in council. It is most suggestive that after 30 years of experience under the reform act of 1858 the financial administration, which had been left with the senate under the tradition of centuries, was transferred from it by the act of 1889 to the court.⁵ The court was made a body corporate, with

¹ "Oxford University Gazette," May 7, 1913, p. 784.

² "Oxford University Gazette," June 4, 1913, p. 819; Mar. 5, 1913, "Of the Boards of Studies," p. 550. "*Statuta Universitatis Oxoniensis*" *Oxonii M. Typographeo Clarendoniano*, 1913. pp. 128-146.

³ "Oxford University Gazette," Feb. 4, 1914, pp. 424-429.

⁴ Universities (Scotland) act, 1889 (52 and 53 Vict., ch. 55).

⁵ *Id.* p. 164.

perpetual succession and all university property vested in it. It was empowered to administer the whole revenue of the university.

In the University of London the senate is most nearly correspondent to the council of Oxford and Cambridge and the court in the Scotch universities. The statutes declare that "the senate shall be the supreme governing and executive body and shall have the entire management of and superintendence over the affairs, concerns, and property of the university."¹ One of the most striking recommendations of the royal commission on university education in London is to reduce the present cumbersome senate of 56 members to 15 and to relieve it of certain legislative functions by instituting a "court" in order to increase the efficiency of the senate as the executive body of the university. It is to have "the management and administration of the whole revenue and property of the university and (except as otherwise provided) the conduct of all the affairs of the university."²

The councils in the six new English universities are the executive bodies, varying in number from 24 to 38. In general they consist of the chancellor, prochancellors, vice chancellor, and the treasurer, and of persons appointed by the court, by the senate, by the municipality, county councils, and other interested local public bodies. They have full financial powers, powers of appointment usually after report from the senate, powers of initiative in legislation by the court, and to review the instruction and teaching of the university.

It will be helpful to add the practice in respect to the council in the newer universities in the Empire. In Australia the organization of these universities seems to have been based on the old University of London:

The governing body—called sometimes a senate and in other places a council—consisted of a number of members (usually 20 to 28) elected by a body variously called convocation, senate, or council, and consisting in the main of former graduates of three years' standing.³

In view of the support from the State and of the need of closer relationship with it, in several of the universities the governor in council appoints a certain proportion of the members of the governing body:

In Canadian universities there is generally a sharp division of administrative control and educational direction. The former, which includes the responsibility for finance and for staff appointments, is usually intrusted to a board of

¹ Cf. Ch. III, "University of London," p. 70.

² Final Report, *supra*, p. 191. The proposed senate would consist of 15 members, the chancellor, the vice chancellor, the chairman of convocation, and 12 other persons, 5 appointed by the Crown, 2 by the "court," 2 members of the academic council by that council, 2 by the London County council, 1 by the corporation of the city of London.

³ Bd. of Educ., Spec. Repts. on Educ. Subjects, vol. 25, "Universities in the Over-Sea Dominions," p. 2.

governors (or of trustees in the case of denominational universities), who in the academic sense are laymen.¹

The latest published study of the organization of universities and colleges is the report of the university commission in the Union of South Africa. The report says: "The university will consist of a chancellor, a vice chancellor, a council, a senate, and a convocation."² The plan contemplates a Federal university, with a representative of both the government and council of the university and the council of each college. Of each college council the principal of the college is to be an ex officio member, and there are to be representative members of any municipality or public body making a contribution of not less than \$5,000 a year and of university graduates. The university council is to be a body of 24 members, of which the principals of the three constituent colleges and a representative nominated by the council of each college will constitute 6 members. The superintendent general of education and His Majesty's astronomer will be ex officio members, 6 members will be elected by convocation, and 9 nominated by the Crown. The presiding officer is to be the chancellor or vice chancellor. The powers of the council give full financial control, subject to the consent of the Government, in matters involving increased expenditures from public funds. The council will admit institutions, recognize teachers, be a court of appeal from the academic senate, from which it will receive an annual report, and will itself make an annual report to the minister of education.

The general conclusions to be drawn from the studies of the councils are confirmatory of vesting the Government and complete financial management in a board, after the American fashion known as the "president and corporation of trustees" or regents or curators.³ These should be small deliberative bodies. The British practice would make the head of the university an ex officio member, and some other administrative officers like deans or treasurers. Uniformly their practice would have representative members from the academic senate and from the body of graduates, and sometimes a representative of the undergraduates. Representation is also provided for public bodies who are contributors to the support of the institution or who are educationally interested. In the case of State or municipal-aided institutions, both have representation. Care is taken that there shall be proportionate representation, and that there shall not be a preponderance from the faculties or the State or municipality. There is an increasing number of laymen in education of various professions and business interests. They are

¹ Bd. of Educ., Spec. Repts. on Educ. Subjects, vol. 25, "Universities in the Over-Sea Dominions," p. 5.

² Union of South Africa. Rept. of the Univ. Commission, Cape Town, Government Printers, 1914, p. 121, *passim*.

³ Cf. Ch. X, "University Officers," pp. 176 and 180.

selected on account of their ability and public spirit, and in no case receive any financial compensation.

In the present order of treatment of university organization the third body is the academic and legislative body still known at Oxford as the congregation. In Paris, the pattern influencing Oxford and Cambridge, the congregation, was the "regents," i. e., the masters of arts actually engaged in teaching, as distinguished from the non-regent masters represented in convocation. Between the hebdomadal board at Oxford and the caput at Cambridge, on the one hand, and the largely nonresident convocation or senate, on the other, by the middle of the nineteenth century congregation, or the correspondent electoral roll of Cambridge, had largely lost its powers. The reform acts, intending to restore power to the actual teachers, instituted a congregation or electoral roll consisting of all masters of arts domiciled within what were the approximate residential boundaries of the two university cities. One design of this action was to include in congregation the large number of private tutors or coaches at that time engaged in university teaching. The unlooked-for result was the substitution of a residential or geographical for a teaching qualification. The number of M. A.'s settling in the university cities upon their retirement from their various occupations, all having votes in the congregation, defeated an intended purpose of the acts to make the legislative assembly of the university one of teachers and administrators.

In 1913 at Oxford the important reform was effected by which residence is no longer a qualification for membership in congregation, and in the future it will consist of the teaching and administrative element in the university and colleges.¹ It will not subserve our purposes to treat of the organizations subordinate to congregation, namely, the faculties, the boards of faculties, and the boards of studies and the general boards of the faculties, as reformed by statutes in 1912 and 1913.² These statutes are steps in the unification of the university and the colleges and of the recognition of all actually engaged in teaching. They make congregation more nearly parallel to the "senatus academicus" of the Scotch universities, but bring into prominence the narrower purely professorial basis of the latter.

In Scotland the senatus academicus consists of the principal and the whole professoriate, excluding assistant professors and all other teachers. Since the act of 1889 transferred the financial administration to the court from the senatus, the latter is intrusted only with the regulation and superintendence of the teaching and discipline of

¹ Oxford University Gazette, Mar. 5, 1913, pp. 551, 552

² *Statute*, supra, 1913, Titulus V, pp. 128-138; "Of the Constitution of the General Board of Faculties," pp. 142, 145; "Of boards of Study," p. 146.

the university subject to the review of the university court.¹ The faculties established by ordinance consist also of full professors only.

The senate institutes boards of studies corresponding as nearly as may be to the departments of study for graduation in arts. Each board of studies consists of the principal, the dean of the faculty of arts, and such other members of the senate and lecturers as the senate may select. Herein is the only opportunity for teachers other than full professors to share officially in university administration. The practice is in great contrast to that of Oxford, Cambridge, London, and the new universities. There is an agitation in Scotland to gain a representation of the entire teaching staff in the administration of the university. In London the academic council is a standing committee of the senate with advisory functions.² The council consists of the chancellor, the vice chancellor, the chairman of convocation, the 16 persons appointed to the senate by the members of the respective faculties, and a member or members of the senate elected by the senate to make up the number to 20. It is obligatory upon the senate to invite and receive reports of the academic council before coming to any determination upon certain educational matters, like the admission of institutions, schools of the university, appointments to the teaching staff, salaries, the regulation of the courses of study for internal students, any matter relating to internal students, and the assignment of funds for buildings and equipment. The members of the respective faculties of the university are appointed by the senate and embrace others than full professors. A faculty reports upon any matter referred to it by the senate and upon courses of study, provision for teaching, and the granting of degrees.

From members of the faculties, the senate appoints annually boards of study, with the aim of securing representatives of every subject of university study, and of giving all teachers an opportunity of expressing their views to the senate. The senate may appoint also other persons than members of the faculties on the board of studies. The academic council and the council for external students, respectively, before advising the senate with reference to courses of study, provisions for teaching, examinations, and the granting of degrees, are bound to receive reports from the board of study concerned.

In the new universities, the senate consists as a rule of the vice chancellor and the full professors. In some cases there is provision for a limited number of other members, for example, in Sheffield, the registrar and the librarian. In general the senate, subject to the approval of the council, has educational control.

¹ Cf. p. 161.

² Cf. Ch. III, "University of London," p. 70.

Each faculty consists of the vice chancellor, the dean of the faculty, the professors assigned thereto, such lecturers, assistant lecturers, and other teachers of the university as may be appointed to the faculty, and such other persons as may be appointed by the council, on the recommendation of the senate, provided their number shall at no time exceed one-third or one-fourth of the total number of the members of the faculty. Each faculty, subject to review by the senate, is responsible for courses of study and regulations as to degrees, diplomas, etc. At Manchester, in addition to the boards of faculties, there is a general board of faculties, consisting of all the members of the several boards, and having power to report to the senate on matters concerning teaching and courses of study which affect the university as a whole. The noticeable points in the new universities are that the central body is the senate, in which in effect the faculties are boards or standing committees, and in the faculties, if not in the senate, the entire teaching staff is represented.

The fourth body, the organization of the graduates, known at Oxford as the convocation, and at Cambridge as the senate, is theoretically the supreme legislative power in these two institutions. In fact it has an absolute veto power, though it is rarely used. This consists of the right to confirm or reject, without the power to amend, the statutes passed by congregation. It elects the chancellor; it elects the university representatives in Parliament; it confers honorary degrees. Convocation consists, in addition to the doctors of the university, of all masters of arts resident or nonresident, who by the payment of fees keep their names on the books, both of the university and of any college or hall. Only graduates taking the B. A. degree are eligible to obtain the M. A. The latter is gained simply by the payment of a fee of \$60 to the university, in addition to such fee as the man's college may require. An annual fee keeps the name on the books. At Oxford "Out of the total number of B. As. it is calculated that only one-third proceed to the M. A. degree and become members of convocation. In other words the franchise is not primarily educational, but pecuniary."¹

From the days of Prof. Jowett various proposals have been made to restrict the powers of convocation. He would have shorn convocation of any power of interference in the "internal government" of the university or in "educational matters." One may summarize Lord Curzon's rehearsal of the proposals and the arguments for and against them.² It is held that convocation should be retained as a final court of appeal lest the university should fall into the hands of an oligarchy of resident teachers, detached from the out-

¹ Curzon, *supra*, p. 84.

² *Idem*, pp. 35-41.

side world, and the connection of Oxford with its old members and through them with the nation lost. A proposal was made and rejected in congregation in 1909 to shift the ground for an M. A. and consequent membership of convocation from a pecuniary to an intellectual basis by making the conditions for an M. A. the taking of honors or a prize or a diploma. Some would have confined the degree of M. A. to those who have had experience in teaching or in research. Against the proposal were the anticipated loss to the revenues of the university in the smaller numbers in convocation, the temptation to lower the standards of the honor schools, and the depreciation of the B. A. In any case the convocation franchise would be limited to a narrow, if not a pedantic, restriction.

Quite an opposite proposal was to admit to convocation all who had taken an Oxford degree and to reduce the fees to a nominal amount. In addition to the pecuniary risk of this procedure were the objections to the impossibility of the meeting of the thousands of members, to voting by proxy, and the heterogeneous and, except intermittently, apathetic constituencies.

Following the analogy applied to the House of Lords was the proposal of some form of the suspensory veto. "It might, for instance, be enacted that if a statute were passed by congregation, by a certain majority in two successive years, it should become law unless it were thrown out by convocation."

Lord Curzon closes with a statement that dealing with convocation is "a problem that can not be indefinitely postponed." This does not seem too strong a statement to one who has made personal inquiries at the two universities and among prominent graduates. It is a general belief that nothing less than an act of Parliament can effect a reform of convocation, and that it will come sooner or later.

In Scotland since 1858 the general council is the body correspondent to convocation or senate in England.¹ It consists of the chancellor, the members of the university court, past and present, the professors, and all persons after registration on whom the university has, after examination, conferred any degree whatsoever. It is enacted that no person shall be allowed to graduate at any of the universities of Scotland until he shall have paid a registration fee. This fee, which is a payment for life, is only \$5. It is the function of the council—

to take into their consideration all questions affecting the well-being and prosperity of the university and to make representations from time to time

¹ Cf. Scottish universities act, 1858 (21 and 22 Vict., ch. 88); Representation of the People (Scotland) Act, 1868 (31, 32 Vict., ch. 48); Universities Election Amendment (Scotland) Act, 1881 (44, 45 Vict., ch. 40).

on such questions to the university court, who shall consider the same, and return to the council their deliverance thereon.

The general councils of St. Andrews and Edinburgh jointly return a representative to Parliament and likewise the councils of Glasgow and Aberdeen. The chancellor and four of the assessors of the university court are elected by the council. The council is more than a nominal body. It has statutory half-yearly meetings, and the annual reports of the university court to the secretary for Scotland are laid before it. To it also are communicated all new ordinances, or changes of existing ordinances, which may be proposed by the university court.

By 1858 the graduates of the University of London were numerous enough to secure their admission in the new charter as part of the corporate body of the university, with the right to assemble in convocation. At present the convocation consists of the chancellor, the vice chancellor, all graduates of three years' standing from the date of their first degree, or who shall have attained a degree higher than that of bachelor and who are upon the register of convocation, and all members of the three standing committees of the senate during their tenure of office.

The annual fee for membership in convocation is \$1.25, or a life composition fee of \$5. The functions of convocation are to "discuss any matter relating to the university and declare its opinion thereon to the senate, to elect the chancellor, 16 representatives on the senate, and the university member of Parliament." The six new universities have followed the example set in Scotland and London of having, with slight variations, a convocation with similar powers and functions.¹

As a rule convocation consists, in addition to the registered graduates paying a nominal fee for registration, of the chancellor, the vice chancellor, the deans of the faculties, and the teaching staff. Convocation may elect a limited number of representatives of the court and in some cases of the council. It is noticeable that its powers are limited to discussion and deliverance of opinions. This point and the practice of including the teaching staff of a university with its graduates in convocation are reinforced by the recommendation of the royal commission on university education in London.² The report would continue the convocation, with its powers of declaring an opinion, but with an amendment making it include the teaching staff.

The report would borrow from the new universities the "court of governors," to which we alluded as the fifth part of their organiza-

¹ At Birmingham named a "Guild of Graduates."

² Report, *supra*, p. 166.

tion. The court is a device in institutions dependent upon public or donated funds to give contributors a voice in university government in addition to that of the teachers and graduates. It is a large body, sometimes of three or four hundred members, representative of all taking a substantial interest in the university. It is nominally the supreme governing court to which appeal may be taken. From its nature it can only make its constituencies heard in the general plan of organization and policy and be in the last resort a coordinating force. The report endeavors to differentiate the court, as a general legislative body acting upon expert advice, from a small and largely independent executive. The report says:

A large heterogeneous body can not transact executive business, and for this purpose it would be powerless because inefficient, while the power would rest, as it ought to rest, with the executive body.

The thought is that the small executive body of 15 members will have the control of finance, and through finance of the details of educational policy, but it will not act without the advice of the professoriate as a whole, expressed through its appointed representatives, the academic council. The report vigorously opposes the view that the court should be able to turn out the executive body of whose policy it disapproves. It reads:

We should agree that this ought to be so if the executive body derived all its powers and functions from the superior body. We contemplate, however, that in London, as in the provincial universities, there should be a differentiation of function established under the statutes and based ultimately upon the obvious fact that administration needs continuity of purpose and control, and the expert judgment which long-continued and constant work in the administrative field alone can give. An executive committee which was liable to dismissal at any moment would tend to lose its initiative, and might spend the greater portion of its period of office in learning its business. We think the legislative control which we propose to vest in the court, and the means it will possess of bringing public opinion to bear upon university policy, will effectually prevent friction, while it will avoid the danger of sudden reversals of policy, which are more fatal in educational matters than in other departments of human activity.¹

Herein is struck the keynote between government and administration. The secret of success of an institution lies largely in the separation but cooperation of these in policies which must not be subject to revolutionary changes. Before we can make an application of our studies in organization and administration, we must take up the subject of "university officers."

¹ Report, *supra*, p. 49.

Chapter X.

UNIVERSITY OFFICERS.

To understand the government and administration of the universities we must consider some of the principal officers and their functions.

In all the universities the nominal headship is vested in a chancellor. He is elected for life in Oxford and Cambridge,¹ the Scotch universities, Manchester, and London, and, excepting Manchester, by convocation, or the body of graduates corresponding to it. The election in Birmingham is by the court, subject to approval by the Crown, and in Liverpool by the court, subject to approval by the visitor. In the three latest universities—Leeds, Sheffield, Bristol—the election is by the court, upon nomination by the council of the university. The chancellor is created as far as possible by the votes of the whole university, in the older universities by the graduates and teachers, and in the newest universities, as yet without a large number of graduates, by the highest and most representative bodies.

He is the highest dignitary and, theoretically, authority within the university, and yet a nonresident officer. Thereby hangs a tale told by the story of the ancient title. Harking back even of the early university usage of the title, we may catch some note of it from the days of Alcuin and Charlemagne in the cathedral schools. After the Conquest, among the four principal officers of every cathedral church of secular canons, namely, the dean, chancellor, precentor, and treasurer, the chancellor became synonymous with the schoolmaster.² With the rise of universities, therefore, the bishop appointed the head of the school, or chancellor. When the university was not in the cathedral town, as in the case of Oxford and Cambridge, the chancellor became nonresident. As universities grew in influence, the chancellor became more than the chief schoolmaster, even the chief authority, sometimes created by the Pope. At Oxford, by the Laudian statute of 1636, the chancellor bore the academic and civic rule of the whole university. He was to guard its

¹ At Cambridge the office is held for two years or for such a length of time beyond two years as the tacit consent of the university permits. Practically it has been for life.

² Leach, A. F. *The Medieval Schools of England*, Methuen, p. 58; cf. pp. 106, 107, 108, 112, 113, 180, 181, 188, 189.

liberties and privileges, and, with consent of the university, to compose difficulties. Gradually the chancellor, at first an ecclesiastical officer exercising public control in the universities, not regarded as a member of the university, became identified with it as its head.¹ At Cambridge he is referred to as the head of the university, to govern it according to the statutes.

He has power to call congregation, to admit candidates to degrees, to see that all officers of the university duly perform their duties, and to punish members *in statu pupillari* for disobedience to the statutes or ordinances of the university.²

As a matter of fact, the chancellor rarely appears in Oxford and Cambridge and seldom takes any part in academic government, his powers being delegated to the vice chancellor. His advice has weight with the ruling body of the university. He is usually a member of the House of Lords, and the leader of public measures and subscriptions on behalf of the institutions. In the Scotch universities the chancellor is president of the general council; any change proposed by the university court must receive his sanction. He names an assessor in the university court. He confers degrees upon persons found qualified by the senate, and appoints a vice chancellor to confer degrees in his absence. In London, as "the head and chief officer," he is a member of the senate and of convocation and of all the boards and committees of the senate. He is the presiding officer of the senate. In the new universities the chancellor is generally characterized as the "head and chief officer" and is often the president of the court, council, and convocation, with power to confer degrees and to hear appeals.

When the strength of the universities made them largely independent of the church, they made their own chancellor, and the executive power within the university was chiefly placed by the nonresident official in the hands of his deputy, the vice chancellor. The chancellorship became, in the main, honorary and was considered by some as merely a figurehead.

If the office be only titular and ornamental, one queries how to account for the embodiment of it in the constitution of the most modern universities throughout the British Empire.³ It is more than a survival due to British veneration of tradition. It may be in part an adaptation to English established rank or class distinctions. Recently the office has been made increasingly active and useful in relating the universities to the public, and possibly in influencing the policies within the institution. This may have been due to the personality of those filling the office. The expansions and the development of policies in institutions in which recent chancellors were

¹ Owen, Sir Isambard, University of Bristol address, "The Significance of a University," 1906, pp. 17, 21.

² Calendar, 1916, p. 52.

³ Cf. Ch. XII, "State Aid and Visitation," p. 193.

known to be active come to mind. One may mention the university reforms at Oxford under Lord Curzon, the actual and prospective reforms at London and Glasgow under Lord Rosebery, the expansion of St. Andrews under Lord Balfour, of Burleigh, and of Aberdeen under the late Lord Strathcona, the founding of Birmingham under the late Hon. Joseph Chamberlain, the upbuilding of Leeds under the Duke of Devonshire, and of Sheffield under the Duke of Norfolk, and the intellectual impetus given to Edinburgh under the Hon. A. J. Balfour, and to Manchester under Lord Morley.

Bristol, the latest of the universities, deems itself fortunate in having Lord Haldane as its chancellor. It claims, somewhat—

After the fashion of the original model, to have restored public control through the chancellor's authority, so to speak, constitutionalized. He exercises his power through a representatively constituted council and court of governors.¹

This theory is being put into practice in solving the difficulties attendant upon a new university, through Lord Haldane's personal influence, his fitness as a student of education, and his experience in educational measures.

The vice chancellor in England, the principal in Scotland, is the resident working head of the university. At Oxford he is the real deputy of the chancellor, who nominates him annually from among the heads of houses in the order of their election as head, usually for four successive years. At Cambridge the power of election, lost at Oxford under Laud in 1636, is retained by the senate. It elects annually, subject to one reelection, from heads of the colleges upon the nomination of the council. In suggestive contrast is the appointment of the principal in the Scotch universities for life by the Crown or curators,² and of the vice chancellor in the new universities for life or an indeterminate term by the court or council.

The duties of the vice chancellor at Oxford and Cambridge are so numerous and complex that it is not unusual for his health to break down, though his term of office is only two or four years. "There is probably, during term time, no more harder worked official in the United Kingdom." He is the presiding officer over the important educational bodies in the university. He is practically a member of every board and committee, educational and financial, in the university. He is concerned with a large number of appointments. He is responsible for the discipline of the university.³ He

¹ Owen, Sir Isambard, *supra*, p. 20.

² In Edinburgh by the curators of patronage representing the university, court, and town council, in St. Andrews *ex officio* the principal of the United College; in the Scotch universities the vice chancellor is named by the chancellor, but his only power is to confer degrees in the absence of the chancellor. It is the custom of the chancellor to appoint the principal as the vice chancellor.

³ Associated with the vice chancellor are two proctors, elected annually, who are his special agents in matters of discipline. It is noticeable that there are no such officers in the Scotch or new universities.

is expected to be in touch with various educational bodies, particularly the public schools, outside the university and to represent the university on numerous public occasions. So similar are the duties of the vice chancellor to those of the president of an American university and so onerous that at both Oxford and Cambridge the suggestion has been made that some eminent man who should devote his entire time and abilities to university work should be appointed vice chancellor for life or for a long term of office. Indeed, the suggestion has been carried to the extent that the vice chancellor—

Should be paid an adequate salary and have an official residence, and a proper (administrative) staff under him. So great would be the number of his duties that it would be advisable to give him a deputy also with an adequate salary.¹

These suggestions are not seriously considered at present at Oxford or Cambridge, but there is a deep feeling that the executive machinery of university government is inadequate.² The feeling has issued at Oxford in the increase of the powers and salary of the assistant registrar,³ as well as in the organization of the board of finance, and at Cambridge in the efficiently organized office of the registry, coming into close cooperation with the vice chancellor, the council, the financial board, and general board of studies. In the Scotch universities, London, and Birmingham, the working head of the university called the principal,⁴ an officer for life, in the main fulfills all the functions ascribed to the vice chancellor in Oxford and Cambridge. He has an organized office in coordination with all the administrative offices similar to that of an American college president.

Durham, London, and the new universities have the office of visitor. It is a revival of the power of visitation in early times asserted by bishops and archbishops and conceded to Kings. In Durham the bishop of Durham is the visitor, in the other universities the King or the King in council. The charters read:

We * * * shall have the right from time to time and in such manner as we or they shall think fit to direct an inspection of the university, its buildings, laboratories, and general equipment, and also the examinations, teaching, and other work done by the university.

This seems a fair recognition of the relation of the modern university to the State and an acknowledgment of State aid.⁵ The

¹ Tillyard, *supra*, p. 242.

² Curson, *supra*, Ch. VIII.

³ Oxford University Gazette, Oct. 29, 1913, p. 136.

⁴ The title is a survival of "principal regent" from the early days when each university teacher was a regent and carried his pupils through all the subjects of the curriculum.

⁵ Cf. Ch. XII, "State Aid and Visitation," p. 192.

principle involved in having a visitor is explained in the constitution of McGill University, Montreal, in which the supreme authority is vested in the Crown and exercised by the governor-general of Canada as visitor:

This is a special and important feature of the constitution, for while it gives the university an imperial character and removes it at once from any merely local or party influence, it secures the patronage of the head of the political system of the country.

In the office of rector the Scotch universities have a relic of the guild or university of students as contradistinguished from the university of masters.¹ Bologna was the model. There is even an imitation of the division in Bologna into four nations, and of the headship of each nation, a procurator or proctor.² At Bologna the associated groups of students from foreign nations elected the "rector scholarium." This director of students at first was distinct from the "rector scholarum" or director of studies.³ The university of masters at Paris handed on the Bologna precedents to England and Scotland. At the head of each of the four faculties in Paris was a dean, and of each of the four nations a proctor. Neither the entire university nor the separate faculties had originally a common head, and not until the middle of the fourteenth century did the rector, at first the head of the faculty of arts by whom he was elected, become the head of the collective university.⁴

In Glasgow and Aberdeen the rector is elected by the matriculated students divided into four nations.⁵ Each nation chooses a procurator, and the rector is elected by the procurators. In case of an equality in the votes of the procurators, the election is determined by a majority of the votes of all the students voting. The rector, whose term of office is for three years, is the official president of the university court, to which he nominates also an assessor. Before he appoints his assessor he may confer with the students' representative council. In St. Andrews the rector is elected by a general poll of matriculated students, since there is no division of students into artificial nations. The election of the rector usually follows a heated campaign, conducted by the students on the grounds of party politics, and is supposed to be educative of each generation of students in the

¹ Cf. Ch. II, "Scotch Universities," pp. 60-61.

² The proctor at Oxford and Cambridge, sharing executive authority with the vice chancellor, is a survival somewhat parallel to the Scotch rector. In the "Early Cambridge and College Statutes" (collected by James Heywood, London, 1855, p. 38) it reads, "Two masters of arts actually regent shall be elected rectors or proctors by the majority of the regent masters of arts." The proctors had powers to arrange lectures, to punish undergraduates, and, in case of neglect by the chancellor or his locum tenens, to convoke the regent masters.

³ Cf. p. 175; Ch. XVIII, "Student Life," p. 248.

⁴ Cf. Ency. Brit., 11th edition, article on "University."

⁵ Each of the three nations consists of students born in certain counties or parishes in Scotland, the fourth nation of students not included in any of the other nations.

politics of the day. Upon occasion some person, other than a great political leader, prominent in the public eye, is elected, as earlier Carlyle, John Stuart Mill, Froude, and Dean Stanley, and now Andrew Carnegie, Kitchener, President Poincaré, and Winston Churchill. The rector's office is chiefly associated with the rectorial address. Beyond that it is an indication of the democratic character of the university, and affords, together with the rector's assessor upon the university court, a real representation of the student membership in the university.

The office of dean, primarily that of the headship of a faculty, historically has had a twofold relation, executive and studious. The deans, with the rector of the university and proctors, became an initiative executive. On the faculty and student side, the dean was virtually a "rector scholarum" or director of studies. With the rise of the colleges in Oxford and Cambridge the functions of deans are found in them, and there is no university dean. Glasgow, alone has from the beginning preserved an officer of dignity with the title of "dean of faculty" or "dean of faculties." Originally the functions of the office were "to exercise a superintendence over the studies, and, in conjunction with the masters, to judge of the qualifications of applicants for degrees." Later, with the rector and the minister of Glasgow, he was made an examiner of accounts and an adviser to the principal and professors in the institution of judicial inquiries concerning the faculties. By the act of 1858 he was made a member of the university court, but was omitted from that body in the act of 1889. He is elected annually by the senate. In all the Scotch universities each faculty is presided over by a dean elected annually from one of their number. Among his functions is the presentation of candidates for degrees to the chancellor or vice chancellor. In London and the new universities each faculty, with some exceptions,¹ elects its own dean for terms of from one to three years. In a few cases the deans are ex officio members of the council or of the court. The functions of the deans are somewhat various, but they are largely formal, and connected with faculty arrangements and not with student affairs and advice. In Scotland there are "official advisers of studies" in different faculties. In Oxford and Cambridge this function is fulfilled by the college authorities and tutors.

This discussion omits titular officers whose functions have become obsolete or would have little application in the United States.² It is worthy of note that librarians, treasurers, registrars, and secretaries hold offices not only of dignity and influence but have membership in legislative and executive bodies.

¹ At Liverpool the deans are appointed by the council upon nomination of the faculties.

² E. g., high steward, public orator, esquire bedell.

In the field of university control certain tendencies make themselves clear. Despite the diversities on paper of forms of government three things stand out in common. They are a headship, vested in a person surrounded by a group of administrative officers, a supreme governing body, and an educational legislature.

There has been an increasing differentiation of the functions of the three, the fixing of the responsibility of each, and, at the same time, the interrelating of them by the principles of representative government.

Experience, on the one hand, with a mere figurehead with only presiding and clerical duties as at Oxford and Cambridge, and, on the other hand, with even a veto power as in a Scotch university, has strengthened the tendency to make a real, resident, responsible, and permanent head of an institution.¹ The retention of a nonresident chancellor suits British political and social conditions. He may be useful for representative purposes outside the university and for advisory purposes within it. The assertion of his long dormant authority would be quickly resented.

The strength of the feeling for a responsible, resident, personal head, with powers of leadership, is proved by the action in the reconstitution of the Scotch universities, and in the constitutions of the new English universities and university colleges. An interesting instance of the tendency occurred upon the resignation of the vice chancellor at Manchester in 1913. The charter provides that the vice chancellor shall be appointed by the university court, after nomination by the university council, who before reporting shall consult the senate. The term of office is left open to be determined by the university. The unusually large representation of the senate on the court and council, as well as the provision for consultation with the senate, gave that body large powers. An acting vice chancellor was selected and a year's time taken for deliberation upon the ideals of the vice chancellorship and the tenure of the office. The number of men in the faculties from Oxford, Cambridge, and German universities, impressed by the annual election of the head in those institutions, insured debate with knowledge at first hand of limited functions and terms of office. The decision is notable, made so largely by the professoriate, for a permanent and experienced leadership.² The recommendation of the commission on university education in London is a move in the same direction, merging the office of principal in that of the vice chancellor, and making him "a permanent official, with a salary, who would be the chief administrative officer of the university."

¹ Cf. Ch. IX, "Organisation and Administration of Universities," pp. 159-163.

² Sir Henry A. Meira, M. A., D. S. C., F. R. S., Principal of the University of London, was elected vice chancellor at Manchester.

In the recent choices of the heads of colleges in Oxford, Cambridge, and London the rule of seniority has not been followed. The powers of leadership of the man have been studied, and freer opportunities for their use given. It seemed evident that the institutions gaining ground were those in which the personality of the heads gave them a leadership above that found in the letter of the law. In personal conferences no head intimated that he sought to grasp greater power, but many desired a less cumbersome administration. One experienced head wrote:

I am strongly of opinion that there is need of a change with us, and that it would be better for our universities if the principal had the same power and responsibility as the presidents of American universities.

A side light pointing in the direction of the above sentiment is afforded by the Australian universities, of which it is said:

The senate have had no representative whom they might consult and who would serve to blend the administrative with the academic view. It has accordingly happened that unusually large power has accumulated in the hands of the registrar, the chief permanent officer of the senate.¹

In short, the experiment to get on without a president proves the need of a responsible head and exposes an institution to the discharge of the necessary functions of that office in an irregular way by an officer irresponsible in that sphere of action. The variety of practices with reference to the headship of British universities points to an increasing appreciation of a resident, responsible, headship, vested in a person of the teaching profession, with executive ability, with a prolonged tenure of office, and a representative of the various elements in the university. It is a coordinating office intimately associated with, and generally having actual membership in, other offices, representing the financial and educational management. It is not intended here to strain a point in favor of the "American boss president," against whom President Harper years ago forewarned, writing that "the true college president is not a boss; he is a fellow student and a brother, * * * an elder brother in close relationship with every member of the family." Nor is it intended to intimate that the British would gladly dream of seeing Prof. Cattell's nightmare of the American college president as a "black beast" in the academic jungle.² The Great Britain of to-day, in many features as democratic as America, illustrates the fundamental proposition of Prof. Cattell "of historic institutions, *Sacerdotium, Imperium, Studium*, the University can in our democracy best conserve the traditions of the past and guide the progress of the future." The

¹ Sir Henry A. Meirs, M. A., D. S. C., F. R. S., Bd. of Educ. Spec. Repts., vol. 25, p. 5.

² Cattell, J. McKeen, "University Control," The Science Press, New York and Garrison, N. Y., 1913, p. 31.

³ Cattell, *supra*, p. vi.

point is that "the advances of democracy and of science in our era"¹ have tended to cause the British universities to revert not to "the mediæval university anarchic in its organization,"² but to the later evolved university with "a single rector for the entire studium, a form adapted to the whole paraphernalia of the modern university with its endowments, buildings, departments, etc." When a democracy follows the dream of Plato to make "a philosopher, ruler," attention is drawn to the opinion of one of Prof. Cattell's correspondents of the benefit of having a Woodrow Wilson in a university presidential chair. He thinks Princeton failed "to reap the full benefits therefrom, because the presidency carried with it too little power, and the other elements in the university too much."³

The general conclusions with reference to the three major bodies in the organization of a university drawn by the late principal of St. Andrews University correspond with our statement of facts and tendencies.⁴

1. The governing body should be a small body, consisting of men of varied professions and interests, who are animated by a desire to benefit their fellow men by the encouragement of those studies and arts which constitute the work of a university. Among these men must be reckoned the teachers of the university, but they should not be a preponderating number.

2. The senate or professors of a university should have the control of the education and discipline with or without a select number of other university teachers, but there should always be an appeal open from their decisions to the governing body.

3. The graduates, and also the undergraduates, should have an opportunity of discussing all matters relating to the welfare of the university in which they take a special interest and laying the results of their deliberations before the senate and the governing body, but their suggestion should be deemed simply advice and without legal authority.

Under the first of these conclusions it should be observed that in all the universities the vice chancellor or principal is a member of the governing body, and in all of them there is representation of the professoriate. The pendulum has swung back and forth from the constitution of the governing body wholly of university teachers to their entire exclusion from that body, excepting only for the head of the institution. At present the point seems to be settled that in addition to the head of the institution, the professoriate should have a representation of not less than two members, and that there should be a predominance of distinguished laymen in education serving *without pay* and primarily attending through salaried secretaries to financial

¹ Cattell, J. McKeen, "University Control," The Science Press, New York and Garrison, N. Y., 1913, p. 7.

² Cattell, *supra*, p. 5.

³ Cattell, *supra*, p. 86.

⁴ Donaldson, Sir James, "Representation of Teachers and Graduates on Governing Bodies." The Rept. of Proc. of the Cong. of the Universities of the Empire, Hodder & Stoughton, 1912.

administration. The body is also expected to be a final authority on general policies and appointments. It is representative in part of public authorities and in part of graduates as well as of the faculties.¹ Excepting permanent officials, membership falls into classes holding office for certain terms of years.

Under the second conclusion it should be remarked that there is absolute unanimity that the control of the education and discipline should be vested in the academic body. The discipline being committed to disciplinary officers. There is a strong tendency to insist that the entire teaching staff and not the professors only, should have representatives in the academic body.

Under the third conclusion the uniform practice, excepting in Oxford, Cambridge, and Durham, is that the organized graduates should have only the power of advice. The legal control surviving in convocation in Oxford, Cambridge and Durham, is sharply challenged. The recognition of undergraduate opinion is increasing.

Recently "advisory committees" have appeared as a rudimentary development of university organization. These committees, appointed by the executive or faculty bodies, may include persons not members of the appointing bodies or of the university, interested or expert in the subjects referred for advice or report.² These committees give the university the benefit of the combined judgment of faculties and practitioners or laymen, and keep the institution in close touch with its environment. The value of these committees has been proven especially in professional, technical, and university extension education. Notable instances are the fruits of the advisory committee of public health in Manchester, of the commerce advisory board, Birmingham, of the advisory committees representing various trades and departments of commerce, Heriot-Watt College, Edinburgh, and of the joint committees of universities and representatives of the workingmen conducting tutorial classes in industrial districts.³

The further improvement in university government is a subject of discussion in every part of the British Isles. The modern six-fold plan of organization, it may be repeated, consists of the personal working head, of the large representative supreme legislative body, of the small executive body—including a limited faculty representation—of the educational legislature with its faculty divisions, of the

¹ Herein is a suggestion of Prof. Cattell's first point in his plan for university control: "There should be a corporation, consisting of the professors and other officers of the university, the alumni who maintain their interest in the institution, and members of the community who ally themselves to it." *Supra*, p. 18.

² E. g., University of Liverpool statutes, sections 28, 29. Cf. University of Manchester, advisory committees of the faculty of commerce, of the faculty of theology, of the public health laboratories, of legal education, of mining, of technology, of agriculture.

³ Cf. Ch. XIX, "University Extension Teaching," pp. 252-254.

advisory organization of graduates, and of undergraduates. The scheme is not without criticism as cumbersome, and giving opportunity for mischievous persons or cliques to play their part at different points along the extended line. A few prominent personages have said they would "scrap" the whole system. Even a single executive council of academic and lay members has been suggested, possibly somewhat correspondent to Prof. Cattell's first proposition.¹

On the contrary, the latest studies confirm the sixfold scheme, at least for State-aided institutions. Not only the final report of the commission on university education in London, but what is known and creditably rumored from Reading, bears out this view. For several years Reading University College, in its preparation to become a university, has had a committee on university policy. This committee has made extended investigations as to a scheme of buildings, the curriculum, and constitution of the new university. The report of the committee on the third point has not been published. We only know that it is hoped that the proposed form of university government "may free the teacher to the maximum possible extent for his proper business of teaching and research."² The last well-authenticated rumor is that Reading will conform in the main to the sixfold plan of constitution of the other new universities.

To point the moral of the present chapter, it is well to quote the common principle and practice in the constitution of American institutions³ written by a prominent American university president:

To have the trust administered by its beneficiaries we have thought in the main in the United States to be inadvisable. Faculty, students, and alumni are in different senses, and yet in a very real sense, beneficiaries of the trust.

For this and other reasons the president is convinced—

(1) That the control of an institution of learning by a body of trustees composed on the whole of laymen is for us in the United States advisable.

(2) That the educational adviser relationship established by that officer of the board of trustees commonly known as president or chancellor is the most effective.

(3) That within the sphere of the power conferred on them by the board of trustees the faculties should exercise control, but outside of such sphere they should have no authority whatever.

It has been seen that the British tendency is strong to adhere to the principle that a trust should not be administered by its beneficiaries. In practice also the president's three points are being followed with modifications based on the principle of a closer interrelation of the three bodies by means of representation. A small representation of the faculty upon the body of trustees is insisted upon. The president or chancellor is to be a representative of the

¹ Cf. p. 179.

² The Reading Univ. Col. Rev., Mar., 1913, pp. 95, 96; Aug., 1913, pp. 176-178.

³ Cf. Ch. IX, "Organization and Administration of Universities," p. 163.

faculty as well as an officer of the board of trustees. There are extensive safeguards for the appointment of faculties and in their control of educational matters. Finally, the whole institution is kept in vital connection with its graduates, its students, the professions, and the public, by organizations of the first three of these named, and by advisory committees of the last, but all without authority except the weight of opinion expressed by them.

Chapter XI.

PROVISIONS FOR THE FACULTY.

Greater precautions are used than is ordinarily the case in the United States to obtain a faculty, using the term in its broadest sense, of ability and to secure its stability and freedom. Among the various methods of appointment there is an increasing endeavor to rest the appointment on the merits and fitness of the candidate. The greatest care is given in the election of professors. In case of a vacancy publicity is given by advertisement and by printed circulars inviting applications by candidates. Close inquiry, however, shows that though an applicant labors under no prejudice, the institution is not unlikely to give the appointment to someone it has sought out for itself. In the past, experiments have been made with every possible method of election to professorships. Appointments by the Crown, now, relatively speaking, a small number, survive notably in the regius professorships at Oxford and Cambridge. At present these appointments are said to be free from favoritism and politics, practically made upon nominations from the university.¹

Appointments by patrons may be said to have disappeared. Now, when a patron endows a chair, pains are taken that the appointment shall be made by experts. The election originally by "regents" and "nonregents," analogous to selection by faculties or graduates, of which there were still traces in "the vicious system of election of professors by convocation, which had been the parent of many abuses," was put an end to by the commissions of 1850 and 1877.² The latter commission vested the elections, with the exception of professors appointed by the Crown, in boards of electors. Illustrating from Cambridge, commonly a board of electors consists of eight members, two nominated by the council of the senate, three nominated by the general board of studies, and three by the special board of studies. These are standing boards not appointed *ad hoc*, and holding office for terms of years. The members of the boards are chosen not only from the faculty, but from distinguished specialists in the subjects in outside institutions.

¹ Cf. Ch. XII, "State Aid and Visitation," p. 198.

² Curson, *supra*, p. 188.

The University of London, following in the wake of Oxford and Cambridge, requires that the title of professor or reader shall be conferred in each case after report from a board of advisers. The vice chancellor and the principal and three "external experts"; i. e., experts outside the university staff and unpaid by any institution in question, must be on every board. The boards vary as the appointees are attached or unattached to any particular school or institution and in accordance with the source from which the salary is paid. For example, in the case of an unattached professorship and readership, the board of advisers, in addition to the vice chancellor and principal, consists of six other persons, of whom three shall be external experts, appointed by the senate after report from the relevant board or boards of studies. The external experts serve on all boards dealing with the same subjects or group of subjects, and are appointed for a term of six years without pay except for traveling expenses. By the universities (Scotland) act of 1889 the university courts became the power to appoint professors, excepting chairs vested in the Crown or other patrons. Edinburgh is unique in having curators of patronage. They indicate an early movement to secure an appointing power above suspicion of influence. By the universities act of 1858, the patronage of 17 chairs previously in the gift of the town council was transferred to 7 curators, 3 nominated by the university court and 4 by the town council. The curators also have the patronage or share in the patronage of several chairs established between 1858 and the exercise of the power conferred upon the university court after the act of 1889.

In the new English universities, in general, the council appoints the professors and other members of the teaching staff on the recommendation of the senate. Subordinate appointments, like those of assistant lecturers and demonstrators, are made by the faculty upon the nomination of the professor or lecturer in charge of a department and confirmed by the council.

Since the beginning of the nineteenth century there has been a revolution with reference to the qualifications for a professorship. At that time social considerations predominated. By the middle of the century Pattison complained that the professor-fellow was simply a teacher, whereas his primary business was to learn and not to teach. "A professoriate has for its duty to maintain, cultivate, and diffuse extant knowledge." Pattison guarded against the misconception especially of the modern superuniversity theorist that the university is to be an association of men of science for the sake of science and experiments with a view to new discoveries. "The professoriate is to know what is known and definitely acquired for

humanity on the most important human concerns."¹ Dr. Farnell sees hopeful signs that the spirit of Pattison is prevailing. He says there is a growing insistence upon the combination of teaching and research for appointment to the highest teaching posts; and a living acquaintance with the methods of teaching and research and some approved work done therein are becoming essential prerequisites. He adds:

This is by no means yet the rule in the Scottish universities; it is beginning to be the rule in many of the modern colleges of England and Wales; it has established itself on the whole at Oxford and Cambridge as regards professorial appointments, but by no means yet as regards the tutorial.²

In fact there is now practiced almost universally the instruction given to the board of advisers in nominating any person for appointment as university professor or reader in the University of London: "They shall have regard to (1) his contributions by research to the advancement of science or learning; (2) his powers as a teacher; (3) generally his eminence in his subject or in his profession."

The importance of security in the tenure of office of a professor is not likely to be forgotten in a country in which in the older institutions the appointment is for life, "*ad vitam, aut culpam*."³ In the modern universities, while it is expected that professors, readers, and independent lecturers shall hold office during good behavior, it is likely, in view of the new pension system, that an age limit for retirement at 65 will become universal.⁴

There are provisions for resignation or removal upon three or six months' notice. In the case of misconduct or incapacity of a professor, the different institutions have various regulations safeguarding his tenure by due notice of dismissal and sometimes by the right of appeal from the executive to the legislative body. So unusual is the violation of the security of the tenure of a professorship that a rumor of it precipitates an inquiry in press and in Parliament.

In the staff of instruction there is no such elaborate hierarchy as there is often in the United States. The titles associate, assistant, and adjunct are practically not used. A "reader" or permanent lecturer may have a fixed tenure like a professor. The scientific and modern methods of instruction have introduced a numerous junior staff of instructors and demonstrators, out of proportion to the number of professorships. This is a cause of complaint,

¹ Tillyard, *supra*, p. 181.

² The Times, June 26, 1914.

³ In 1914, venerated and beloved, a master of Clare College, Cambridge, was in his ninety-fourth year, and the principals of St. Andrews and Edinburgh above 80 years of age.

⁴ E. g., "No professor shall hold office after he has completed his sixty-fifth year unless council on the recommendation of senate continue his office on special grounds." University of Bristol, Standing Orders of Council, Mar., 1913, p. 56.

especially in the Scotch universities.¹ The appointments are from one to five years. The chances for an academic career are lessened, and hitherto the outside demand for university specialists has been small. The plea has been made, on behalf of the junior staff—

To introduce an adequate scale of salaries and pension scheme for all members of the staff and to give them a voice in the management of the institution * * * the more important lectureships should be converted into professorships or adjunct professorships * * * as in American universities.²

The old story of the inadequacy of the remuneration of the teacher repeats itself in Britain as elsewhere. His emoluments, to say nothing of the pecuniary rewards of the business world, are not comparable with those of other professions, excepting the clerical. An agitation of some 40 years for an increase of salaries, begun without special reference to the increase in the cost of living, has not yet realized its ideals, though advances have been secured.³ In 1876 at Oxford the salaries of professors ranged from even \$500 or \$1,000 to \$4,000. The Marquis of Salisbury said to the House of Lords:

Compare these annual stipends with what is paid in other departments. I do not believe that less than \$5,000 a year, with a fair pension beside, will secure the highest talent for those professorships.⁴

In 1904 the average annual income of a professor at Cambridge was still not more than \$2,750, with a range of a professor's stipend from \$450 to \$4,000 a year. New statutes had been adopted contemplating a salary of \$2,000 a year for a reader, but none received more than \$1,500, and in several cases only \$500. The stipends of university lecturers ranged from \$250 to \$1,000.⁵ These figures are, a decade later, substantially the same, except the minimum for professors. Members of the staff, and especially professors, have certain perquisites and opportunities for fees, particularly as examiners. The regulation of the University of London represents fairly well the amounts paid for salaries in the new universities.⁶ It reads:

The guaranteed minimum salary for a university professor giving his whole time to the work of his post shall be \$3,000 per annum, and the guaranteed minimum salary of a reader giving his whole time to the post shall be \$1,500 per annum.

In exceptional cases smaller salaries are permitted. In the matter of salaries a change for the better is coming slowly. The great

¹ E. g., the University of Glasgow in 1870, the professors in the staff were as two to one; to-day they are as one to four. *The Times*, Edu. Supplement, Apr. 6, 1915. Cf. Ch. II, "Scotch Universities," p. 64.

² *The Times* sup., supra.

³ Cf. Table 15, "Range of Salaries."

⁴ Tillyard, supra, p. 278.

⁵ *Quarterly Review*, Apr., 1906, cf. Tillyard, supra, p. 282.

⁶ Cf. Table 15, "Range of Salaries."

inequalities due to the endowment of chairs in different periods are being removed. There is no attempt being made at absolute uniformity, but only to establish minimum standards.¹ In general the salaries in professional or technical chairs are higher than those of the academic professorships on account of the gains which may be obtained in practice. Without exception the salaries of the heads of universities and of colleges are materially larger than the maximum salary of a professor. In a majority of cases they are double the maximum.²

The attempt to establish pension systems in all the universities is the most important recent movement. The older universities, with the life tenure, had little occasion for anything but disability pensions. They met the need largely by the use of fellowships³ or by doles in special cases.

In the eighteenth century a "fund" was established "for a provision for the the widows and children of the ministers of the Church of Scotland, and of the heads, principals, and masters in the Universities of St. Andrews, Edinburg, Glasgow, and Aberdeen." The scheme was a contributory one. The universities (Scotland) act of 1889 empowered the commission to provide a pension scheme for principals and professors. Attention was focused upon the subject of pensions by the establishment of them in the twentieth century English universities, and by the national old-age pensions act of 1908. Oxford and Cambridge did not escape the movement, and both of them have formulated pension schemes, though for lack of means they have not been put into operation. These universities, as compared with the Scotch and new English institutions, have to contend with the absence of financial support from the State and the complications arising from their college systems.

In 1909 Cambridge appointed a pension syndicate which reported in favor of the university's forming its own pension fund and of a noncontributory scheme. With certain exceptions its beneficiaries were to be professors, readers, and university officers, with not less than 15 years of service. The main provisions were compulsory retirement at the age of 70; a possible retirement after the age of 65; in case of a stipend of \$3,000 or more a maximum pension of \$2,500 a year, or an annual payment equal to five-sixths of the stipend, and an annual payment equal to one twenty-fifth of the maximum pen-

¹ The stipends of the Oxford and Cambridge college staffs vary. This is true not only of the fellowships, but of the payments to the members of the educational staff. The scale of payment at one of the large colleges is doubtless above the average. Senior lecturer, £535 a year; lecturer or assistant tutor, in accordance with years of service, from £262 to £420; assistant lecturer, £210; tutor, £682, plus stipend as lecturer; senior tutor, additional, £106.

² Cf. Report of the committee on Scottish universities (ed. 5257), 1910, p. 9.

³ Cf. Ch. I, "Oxford, Cambridge, Durham," p. 32.

sion for each year of service.¹ Professors and readers on retirement after the age of 65 might become emeriti professors and readers, without statutory duties or powers. A relief pension might be granted in special cases under exceptional conditions by grace.² The university is accumulating a pension fund in accordance with this scheme, and also one for assistants, clerks, and servants.³

Also, in 1909, at Oxford, Lord Curzon included among the reforms he advocated the establishment of a professorial pension fund, the colleges having already instituted pension funds for their tutors.⁴ In the meantime, \$50,000 having been given for the purpose of forming a pension fund, in 1913 a statute was promulgated for the establishment of a pension scheme and fund by the university. It was to be an old-age pension scheme, limited to certain professorships tenable for life. It provided for compulsory retirement at the age of 70, upon an annual pension equal to one-half of the stipend at the date of the vacation of office, with the provisos if the service was only 9 years or less the pension should be diminished by one-tenth for each year short of 10 years, and if the service had been for 26 years or more the pension should be increased by one-twentieth for each year exceeding 25, but no pension to exceed two-thirds of the stipend at the date of vacation.⁵

The federated superannuation scheme for English universities and university colleges in receipt of exchequer grants, inaugurated under the auspices of the board of education in 1913, has justified the opinion of the board that it is "one of the most important developments which have been made in recent years in the sphere of university work."⁶ The scheme is extending beyond all the institutions in receipt of the grant in England to other university institutions. The board's indirect connection with the scheme through their advisory committee has been terminated. Its supervision has been taken over by a central council, composed of representatives from all the institutions cooperating in it, and an executive committee of that council. In 1912-13 the Government grant to these institutions for superannuation was over \$45,000. Inclusive of this amount the institutions expended for the purpose \$114,200, or 3.4 per cent of their total expenditure. The scheme, in brief, is compulsory on every new entrant of the teaching and administrative staff with a salary of \$1,500 or upward, and optional for a member with the salary of

¹ Cambridge University Reporter. Oct. 9, 1911. By statute in 1882 the university was empowered to give pensions to retiring or disabled professors or readers. *Cam. Univ. Statutes*, 1904, with supplement, 1911, pp. 49, 51, 58.

² Cf. *Cam. Univ. Reporter*, Mar. 5, 1912, pp. 670-676.

³ *Cam. Univ. Reporter*, Mar. 23, 1914, p. 30. Cf. p. 64.

⁴ Curzon, *supra*, p. 159.

⁵ *Oxford University Gazette*, May 7, 1913.

⁶ *Bd. of Educ. Repts., Universities and Univ. Colleges*, vol. 1, 1914, p. vii.

between \$1,000 and \$1,500, and with the consent of the institution for a member with a salary of between \$800 and \$1,000. The plan requires an annual contribution of 10 per cent of the salary, excepting in the case of the excess of a salary above \$5,000. The normal contribution is 5 per cent of salary by the beneficiary and 5 per cent by the institution, but the governing body may increase their proportion of the total 10 per cent. The ordinary means of financing the system is by arrangement with selected insurance companies for endowment assurance policies or deferred annuity policies, with or without return of premiums, at the option of the beneficiary, though it is possible for an institution to create its own pension fund. Every policy is held by the institution upon a discretionary trust in order to safeguard the interest of the beneficiary, and, in case of his removal from one institution to another, to facilitate the transfer of the policies. The insurance policies mature at 60. It is a mistake to speak of 60 as "an age of compulsory retirement."¹ The age at which the policies mature is fixed at 60, but institutions have complete freedom in determining the actual age of retirement. After 60 and up to the age of actual retirement the proceeds of the policy, together with the further contributions both by the university and the beneficiary, may accumulate at compound interest by arrangement with the insurance company. The reason why 60 is taken for the maturity of the insurance policy is that this is the earliest age at which normal retirement at present takes place, and the decrease in the surrender value of the policy if a greater age than 60 were fixed for its maturity. The underlying principles of the scheme and its "considerable flexibility" to meet the varied needs, especially of smaller institutions, are causing its spread in England and adaptations of it in America.²

The fundamental principle is:

That the teachers in all the universities constitute a profession comparable with the civil service, and that transference from one university to another should not be accompanied by a financial penalty any more than is transference from one Government office to another.³

The principle of compulsory contribution by the beneficiary and the institution, the contribution distributed over the whole of the working life of the beneficiary, is a recognition of the pension as in the nature of deferred pay. The inclusion as far as possible of all

¹ An error coupled with another, "that the Universities of Oxford and Cambridge * * * are not assisted by the British Government in any manner." The Carnegie Foundation for the Advancement of Teaching, Eighth Ann. Rept., 1913, p. 46. Pp. 38-46 contain a good history and summary of the federated system.

² Cf. Mass., teachers' retirement law, Carnegie Foundation Rept., supra, p. 46; and the Mass. bill to establish a retirement system for employees in the public service, Carnegie Foundation, Ninth Ann. Rept., 1914, p. 27.

³ Cf. Ch. XIV, "Applied Science and Professional Education," p. 450.

the members of the permanent teaching and administrative staff is a unifying as well as profitable principle. The policy of cooperation by institutions, with liberty for variation in the application of details of the scheme by any given institution, and the economy in making use of existing insurance companies have caused the plan rapidly to supplant other schemes.¹ The advisory committee were not convinced that adequate provision is at present made for the families of members of the staffs, but the way is open for the improvement of the scheme by the provision that the executive committee are to make recommendations to the central council from time to time in regard to questions of importance.

¹Cf. Bd. of Educ. First Report of the Advisory Committee on the Distribution of Exchequer Grants to Universities and University Colleges in England. Mar. 28, 1912 (Cd. 6140); Second Rep., Feb. 4, 1913 (Cd. 6617); Third Rep., June 11, 1913 (Cd. 6369).

Chapter XII.

STATE AID AND VISITATION.

All the universities and university colleges in the United Kingdom receive direct grants from the State. These grants have increased by leaps and bounds since the first grant in 1882-83 of \$10,000 to the Aberystwyth University College. By 1886-87 the three Welsh University Colleges were dividing \$60,000 equally among them. In 1912-13 the exchequer grant to these three colleges amounted to \$127,500. The first exchequer grant in England began in 1887-88 and 1888-89, with the sum of \$10,000 to Manchester, and by 1912-13 reached the amount of \$745,000 divided among 18 English universities and colleges. To this sum must be added other parliamentary grants under the board of education for technological and professional work, and from other Government departments like the board of agriculture, making a total to the 18 English institutions including the exchequer grant of \$1,164,105, and to the Welsh colleges of \$171,085. The percentage of total income from the State of the 18 English institutions is 35.2, and of the Welsh institutions 54.3.

In 1883 the four Scottish universities, chiefly through annual votes by Parliament, were receiving State aid in the sum of \$141,610.¹ Encouraged by the increasing annual grants to the English and Welsh universities and university colleges, in 1907 the Scottish universities appealed for enlarged grants. The committee on Scottish universities in 1910 reported in favor of an annual grant of \$200,000, supplementary to the \$360,000 they were then receiving, and that sum was given.²

Considerably more than \$500,000 is annually granted to the University of London and the institutions associated with it. The influence of the rising flood of State aid has begun to tell upon the older universities. Their age-long policy, with the exception of a few small doles for specific purposes, has been to be independent of State aid. The most significant educational event in Great Britain in 1912 was the acceptance by Oxford of a grant for engineering science.³

In 1913 and 1914 Cambridge faced the question of State aid, and voted to appeal for an annual grant of between \$20,000 and \$25,000

¹ Rep. of the Committee on Scottish Universities, 1910 (Cd. 5257), p. 18.

² Cf. Ch. II, "Scotch Universities," p. 48.

³ Cf. Ch. XIV, "Applied Science and Professional Education," p. 210.

for the medical department.¹ The debates in the senate house were followed by the battle "of fly sheets." The question is such a living one on both sides of the Atlantic that some of the principal points in the discussion may be given. It was argued that the principle of applying for State aid had been fully considered in all the other universities of the United Kingdom, including Oxford, with a decision in favor of accepting grants. Communications were cited from authorities in universities receiving grants showing that the experience of these universities had been free from unfavorable results and interference. It was replied that—

There was a desire to help the younger universities in their interesting infancy by giving them a dole, but the Government never contemplated such help for Cambridge and Oxford. It would be confiscation of public funds, a hardship on the poor, struggling taxpayer, to encourage an application of the kind for Cambridge.

Reference was made to the opinion expressed in 1912 by the general council of the University of Edinburgh against the proposed imposition of conditions upon the payment of parliamentary grants by the treasury regarding the inclusive fee, as "interfering unwarrantably with the freedom of the Scotch universities." To the latter point it was answered that the Treasury did not attempt to impose new conditions in connection with an existing grant, but to give an additional grant in compensation for the loss of income which might follow the adoption of an "inclusive fee." It was added that now Edinburgh had temporarily accepted as an experiment the offer of the additional grant which had been accepted by the other Scotch universities. The argument was pressed home that the medical department in Cambridge was gravely in want of monetary assistance, and that the university and colleges were not in a condition to meet it, nor were benefactions in sight. This caused a debate upon the old question, if State aid would not stop private munificence upon which the older universities depended for support. It was said that "the great benefactions in America were not given to State universities, but to the independent institutions." There stood out, however, on the other side, the experience in this particular of the Scottish and new English universities. In 1910 the Scottish universities committee reported that since the grants of the act of 1889 the larger part of probably not less than \$5,000,000 had been received from private benefactors or raised by local effort. The testimony of Reading is consonant with the facts at all the new universities:

At Reading local munificence has been conspicuous, has been encouraged by State recognition of the progress accomplished * * *. The public recogni-

¹ Mar. 14, 1914, the senate took the vote; Placet, 267; non-Placet, 235.

tion of worth and effectiveness implied in the award of treasury and other Government grants has been an indispensable antecedent condition of each of the considerable private benefactions.¹

The fundamental objection to the reception of State aid was the preservation of academic freedom. The objection was formulated by Prof. Sir J. J. Thomson:

It was most desirable that there should be some educational authority in this country free from the control of the board of education, free to work out its own scheme in its own way, without any interference from outside.

The argument was elaborated. The existing liability to parliamentary interference would be increased by the annual appearance on the estimates of the grant, subject to criticism and defeat by a snapped vote in the committee of supply. A second source of interference would be in the development of a bureaucracy in the department of education, at the very least burdening professors with official communications as to details. It was suggested that the preservation of—

six centuries of independent self-government carried on to the honor of the university and the advantage of the nation was endangered by mysterious schemes, which were in embryo at the board of education, for the centralization of education and its standardization.

The reply of those in favor of the grant was that the objections were based on fear of inspection by outside persons, and fear of interference with university teaching by outside criticism. In general it was urged that the advantages which would accrue to the medical school if the proposal was carried through would far outweigh the problematical risks based on fear. It was denied that the grant would put university teaching under the control of a Government department, because the conditions under which the grant would be made are limited to a consideration of the size and efficiency of the school and to knowledge that the money is spent in forwarding the objects for which it is granted.

The procedure of the board of education in the case of the universities' grants was cited. The board—

appointed not an "inspector" but a "visitor," and that person was selected by an advisory committee of experts; the visitation was not "annual." The object of the visitation was not disciplinary, but that the board might be able to obtain first-hand knowledge, and to collect information of the working of departments in different universities. If any important suggestion were to be made to the university, it was done only after consultation with the advisory committee. The board did not desire to introduce any policy of its own; it could give advice or knowledge it had been able to gather, but freedom must be left to the university to work out its own policy of education. The grants were given to the school as a whole and in a lump sum, not to individual

¹ Agric. Educ. Rep. of Deputation, Reading, 1910, p. 107.

departments. The proportion given to each department would be decided by the university, not by the "board."¹

To the thought that the present policy of the board might be altered, or that Parliament might intervene, it was conceded that it was not impossible, but that it was very improbable in the light of established practice. In any case Parliament was all-powerful. On the whole the freedom of the universities from State interference had been maintained. Springing up without charters from the State, the older universities, though not formally receiving State aid, had been indebted to the State through privileges and exemptions conferred and through royal patronage. They were related to the State through the public character of their life-long chancellors, through Crown appointment of many professors, and by the visitations of royal commissions and ensuing acts of Parliament.²

The new universities, though the charters run in the name of the Sovereign, are universities of the people, founded by local contributions and generosity. They are not, therefore, State universities in the American sense of being State-owned and State-controlled, though so largely State-supported. The grants are determined on the report of experts in consideration of two facts: (1) The efficiency of the university and the value of the work which it does, and (2) the extent of the local support which it receives. The Treasury, the board of education, or other board administering the funds constitute advisory committees, ordinarily quinquennially, consisting of the most eminent educators or experts, who serve without salaries. This method of distributing State aid in lump sums, together with the broadly representative membership of the autonomous governing body of each institution, prevents the evils of State interference and combines the benefits of State relationship with efficiency and freedom in the institution. It is hardly conceivable, if the educational institutions in Britain were wholly State-owned and supported, that they would make them departments of the State, in the hands of salaried officers subject to political changes. The fact that institutions of higher learning, whether privately endowed or otherwise, are public institutions in their nature and by charter is recognized by the office of visitor³ in the new universities, and the other provisions for visitation by advisory committees and occasional royal commissions. May not the State universities in the United States profit by the example of the State-aided institutions in the arrangements to secure efficiency of administration and to safeguard against unwise State interference,

¹ Cf. *Cam. Uni. Reporters*, Oct., 1913, Mar., 1914; and fly-sheets, pro and con, issued Mar., 1914.

² Cf. *Chs. X*, "University Officers," pp. 171-174; *XI*, "Provisions for the Faculty," p. 182.

³ Cf. *Ch. X*, "University Officers," pp. 173-174.

and the endowed institutions profit by the example of State visitation, in just recognition of their public status, and to strengthen their hold upon the public?

The war promises to introduce a new epoch in State aid to higher education. The dependence of all the institutions, including Oxford and Cambridge, upon fees to meet a considerable proportion, in some cases two-fifths, of their current expenses, has threatened financial disaster in view of the shrinkage, sometimes of two-thirds, of attendance due to the war. The additional emergency grant, after the outbreak of the war, of \$225,000 for 1914-15 to the board of education for institutions in receipt of grants may be a happy augury for the future. On the other hand, a parliamentary retrenchment committee has begun its labors by scrutinizing the expenditures of the board of education, of the road board and development commission, and of the board of agriculture and fisheries. The advisory committee on university grants and the treasury have asked for statements and estimates of income and expenditure and of proposed economies.

The first response is an appeal against reduction of grants during the war, in a letter to the committee from the vice chancellors of Manchester, Liverpool, Leeds, and Sheffield.¹ In the statement of these universities, which is more or less that of all the institutions, they seize the opportunity to reach the public with arguments to which the British public is likely, as never before, to be attentive. They assert that "the value of the universities as arsenals of scientific knowledge is now much more generally understood in England than was the case before the war." They believe:

That the expenditure on the universities has been a highly remunerative national investment, though not so remunerative as it would have been had the responsible leaders of British industry realized more quickly the value of science under modern conditions of trade.

The service of the institutions "both in connection with the war and in the economic reconstruction that may follow it" emboldens them to appeal "in the economic interest of the nation to increase the public grants, even at the present time of financial difficulty." The financial embarrassment of Oxford and Cambridge has already required acts of Parliament² to enable them to readjust funds. With their attendance reduced in 1915-16 from above 3,000, respectively, to something like 600, and with some of their colleges closed, they too may be driven to ask increased state aid.

¹ Printed in *The Times Edu. Sup.*, Oct. 5, 1915.

² *Universities and Colleges (Emergency Powers) Act, 1915*,

Chapter XIII.

COORDINATION OF INSTITUTIONS.

The vexed problem of securing economy and efficiency by the co-ordination of institutions of higher learning of the same or different types, and especially in different localities, affords a variety of instructive experiments in Great Britain. First comes the ancient and unique confederation of colleges, to which we have referred in Oxford and Cambridge. It was not without its influence upon the varieties of the modern federal university like London,¹ Victoria (Manchester), and the universities of Wales and Ireland, which illustrate the second method of coordination. Coordination by amalgamation of two independent and rival institutions into one is so difficult that it took nearly three centuries to accomplish it in the case of Aberdeen.² Then it was only effected by the strong arm of the State. Beneficial as have been the results of the amalgamation, after almost 60 years a distinct line of cleavage may yet be detected in the united university. So persistent is institutional life, so potential are historical associations, and so sacred are inherited trusts, that, evidently, the intervention of the State is only justified in extreme cases.

Coordination through a single educational corporation without complete financial incorporation has been evolved at Durham and Newcastle and at St. Andrews and Dundee.³ In both cases the difficulties have been those of reconciling the ancient with the modern spirit, and of combining institutions in different localities, and aligning local interests. It has taken thirty or forty years to work out the problem. The growth has been from affiliation to incorporation. At Durham in 1851 a nominal relationship began with the "Newcastle-upon-Tyne School of Medicine and Surgery"; the title of the latter became "The Newcastle-upon-Tyne College of Medicine in connection with the University of Durham." In 1870 a closer connection was formed by which the college was called "The University of Durham College of Medicine."

¹ Cf. Chs. III, "University of London," p. 73, *passim*, 77; IV, "The New or Provincial Universities," p. 108, *passim*.

² Cf. Ch. II, "Scotch Universities," p. 56.

³ Cf. Chs. I, "Oxford, Cambridge, and Durham," p. 43, *passim*; II, "Scotch Universities," p. 57.

In this period (1871) at Newcastle the University of Durham and the North of England Mining and Mechanical Engineers established "Durham University College of Physical Science," now known as Armstrong College. The faculty of science in the University of Durham "is seated entirely at Armstrong College," where all the work for the degree of B. Sc. is done. Early the Newcastle students were admitted by the university to the degrees in letters, though not until recently to the degrees in arts. The arm's-length affiliation did not stay the tendency to develop two rival institutions. The reconstitution of the university in 1909, through an act of Parliament, by a plan of finely devised balances, has apparently established a stable equilibrium. In the one university there are the "Durham division" and the "Newcastle division." The oneness of the university is secured through one visitor, one chancellor, one vice chancellor, and other university officers, one senate, one convocation, and a united professoriate.

The nicely calculated balance of authority is worked out in the senate, the supreme governing and executive body of the university, with control of purely university property and fees. Of the 38 other members than the chancellor of the senate, 6 are appointed by the King in Council, 12 each by the Durham division and the Newcastle division, 8 members are elected by the one convocation, with the proviso that 4 shall have been students of the Durham division and 4 students of the Newcastle division. Provision is made in each division that half of the representatives shall be chosen by the professors or teachers. In the Newcastle division the representation from the College of Medicine is 4 and from Armstrong College 8.

The statutes declare, "There shall be professors *of* the university and professors *in* the university." The professors *of* the university consist of certain persons with vested rights, and of any persons declared by the senate to be professors of the university in positions for which the senate may have received funds. Professors *in* the university are those appointed to the office by the council of the Durham Colleges, or by the council or other executive authority of the College of Medicine, or of Armstrong College, or persons determined by the senate in an affiliated institution.

Under the powers of the senate to suspend or remove from the membership of the university, professors and other teachers of the university may be suspended or removed with the right of appeal to the visitor.

Each faculty has its board, consisting of professors and such other members of the teaching staff as the senate may choose. The general powers of the faculty board are to advise the senate and the authorities of the colleges in the university with reference to the curriculum, examinations, degrees, and the appointment of examiners.

There is also a general board of faculties, consisting of all the members of the several boards of faculties, to make representations to the senate upon any matter concerning the curricula or examinations of the university. No curriculum of university study, or scheme of examination, for initial degrees, shall take effect unless approved by the senate, though it may have been formulated by the executive authority of a college.

The provisions for safeguarding the autonomy of the units in the university are as explicit as those for the institutions' unification. At present there are three units recognized administratively, namely, the councils of the Durham Colleges, of the College of Medicine, and of Armstrong College. Each exercises "full control over the teaching, residence, and maintenance, and discipline of all students of the college." Each controls its finances apart from certain statutable payments to and from the university. Each college in the Newcastle division is an incorporated society whose members are called governors. The executive of each college is a president and council. In each the educational work is primarily in the hands of its teaching staff.

A similar experiment to that at Durham has been tried at St. Andrews University and the University College, Dundee.¹ In 1885 an arrangement was made with St. Andrews under which the science degree of the university was thrown open to students of the Dundee College. Under the universities (Scotland) act of 1889 the commissioners were empowered—

To affiliate the said university college to and make it form part of the said university, with the consent of the university court of St. Andrews, and also the said college with the object, *inter alia*, of establishing a fully equipped conjoint university school of medicine, having due regard to existing interests, and to the aims and constitution of the said college, as set forth in its deed of endowment and trust.

An agreement was made providing that the property of Dundee College should remain under the control of the college council, and also the expenditures for maintenance, and the salaries of its staff. On the other hand, the agreement specified that—

The council of Dundee College should have no jurisdiction over the university teaching in the college or over the courses for graduation, the fees for classes forming part of these courses, or any other academic matters *ejusdem generis* with those named.

The university court agreed to develop the college on the lines of its foundation. The court was entitled to employ the services of any Dundee professor at St. Andrews and of any St. Andrews professor at Dundee with the consent of the professor and of the senate and of the council. The arts degree, as well as that in science

¹ Cf. Ch. II, "Scotch Universities," pp. 56-57; also p. 202.

was opened to the students of Dundee. The college flourished under the arrangement. Opponents of the union, however, by litigation on a technical point succeeded in having it set aside from 1894 to 1897, when it was restored after a decision in the House of Lords. New questions precipitated by additional grants, inclusive fees, and their collection, etc., have caused disputes; nevertheless the plan promises to be permanent.¹

The principal of Dundee College is appointed by the college council. He, together with the provost of the city of Dundee, is a member of the university court of St. Andrews, thus the college has independent representation in the executive body of the university. But the professors and other members of the staff of the college teaching subjects qualifying for graduation are appointed, not by the college council, but by the university court.

The notable difference between the Durham plan and that of St. Andrews is the statutory provision in the former for an exact equality of representation of the colleges in the supreme governing body of the university. Both plans have found a way of securing the weight and fame of a single institution, of preventing the development of rival institutions with unnecessary overlapping, of preserving the entity and the financial independence of each institution with the benefit of the local enthusiasm attendant upon it. The supremacy also of educational interests and administration to which the financial are made subsidiary is conserved.

A fifth method of coordination is that of cooperation secured by voluntary agreements between independent corporations. Recent and happy examples of this procedure are found in the agreements made between Heriot-Watt College and the University of Edinburgh and between the Royal Technical College, Glasgow, and the University of Glasgow.²

The University of Edinburgh and Heriot-Watt College led the way by an agreement in 1901 "to secure mutual cooperation in the training of engineers." A joint advisory committee was appointed consisting of the dean of the faculty of science and four professors in the university and the principal of the college and four governors of George Heriot's trust. A professor in the college was made a member of the examining board for the engineering degree at the university. The advisory committee was "to draw up each year a program for a joint curriculum of study" to be submitted to the university court and to the governors of George Heriot's trust. By

¹ Report of the decision of the House of Lords in an appeal relating to the union betwixt the University of St. Andrews and University College, Dundee, July 27, 1896; statement by the university court, St. Andrews, 1912; memorandum by Principal Sir James Donaldson (undated); memorial for the university court of St. Andrews for the opinion of council, January, 1913.

² Cf. Ch. II, "Scotch Universities," p. 65.

this arrangement diploma students of the college received part of their training at the university and degree students of the university received part of their instruction at the college. It was expressly stated that the agreement should "involve no financial responsibility of either contracting party toward the other."

In 1912 the cooperation between the university and Heriot-Watt was carried much further by the development of a complete scheme for degrees in civil, mechanical, and electrical engineering. For the first time the staff and equipment of the college are fully utilized for the benefit of university students. The program of studies provides that all classes in the first-year course are to be taken at the university. In the second and third years Heriot-Watt College classes in specialized subjects are interspersed with those in the university.

After careful consideration by a joint advisory committee of the University of Glasgow and of the Royal Technical College, Glasgow, a scheme of cooperation of the institutions, called affiliation, was devised, which was approved by the lords of the Scottish universities committee in 1911 and by the King in council in 1913. The plan was one of cooperation, departing from strict affiliation in not requiring the representation of the university court on the governing body of the college nor the representation of the governing body of the college in the university court. The separate financial administration of each of the institutions was to continue unaltered.

The senatus academicus of the university instituted a joint board of studies and applied science, consisting of the principal of the university, the director of the college, the university professors whose subjects qualify for graduation in applied science, and the college professors conducting approved college courses in applied science, together with such university and college lecturers in applied science as they may appoint.¹

The university court, having received from the senatus a report by the joint board of studies in applied science, has approved courses of instruction given during the daytime in the college as equivalent to courses of instruction given in the university for degrees in applied science. The professors and lecturers concerned are to submit annually a scheme of courses and a syllabus of the subjects to the joint board of studies who report thereon to the senatus and to the governors of the college. The senatus in turn reports thereon to the university court.

The governors of the college may communicate to the university court their recommendation upon the reports framed by the joint

¹ At present there are 11 members each from the university and the college in the joint board of studies in applied science.

board of studies. The university court makes the final deliverance to the senatus and to the governors of the college. The examiners in each subject for graduation are the teacher in the university, the teacher in the college, and an additional examiner appointed by the university court. Candidates for graduation who attend approved college courses must pass the same examinations for admission and graduation as the students who attend university courses. They are required to matriculate in the university. They enjoy the same privileges and are subject to the same discipline as other matriculated students.

The fees for approved college courses are not to be less than the fees for university courses and are to be collected and retained by the governors of the college. The fees for courses given in the university and for matriculation, examination, graduation, and registration are to be collected and retained by the university court.

Coordination by a coalition of universities to insure common standards in fees and examinations exists in Scotland, and with reference to examinations in the four new northern English universities.

The Universities (Scotland) act of 1889 empowered the commissioners to make a closer coordination than the existing coalition. The act contemplated the establishment of a general university court, over and above the four universities' courts—

With a view of taking in review the general interests of the universities, especially in regard to degrees and examinations, and with the duty of reporting to Her Majesty on new ordinances or changes in existing ordinances affecting all or any of the universities, and with power to report to the secretary for Scotland on matters connected with the universities.

Evidently fearing the dangers of centralization and of opportunities for state interference, and appreciating the worth of the individualism of institutions, the commissioners did not establish a general university court.¹ They left to each university court the appropriation of the lump sum allotted to the university out of the annual grant. They reserved to each university court the power to make new ordinances, but effected an interrelation of the four universities by the proviso that such ordinances—

before being submitted to His Majesty for approval, shall have been communicated by the university court to the senate, the general council, and the university courts of the other universities, and have been laid for 12 weeks before both Houses of Parliament.

The preliminary examinations for each of the four universities are conducted under the control and supervision of a joint board of examiners, consisting of 16 members, each university court appoint-

¹ "An occasional conference of representatives of the four university courts and also a conference of the general councils has fulfilled one of the purposes of the rejected university court.

ing 4 annually, under a scheme representing the four branches of English, classics, mathematics and dynamics, and modern languages. The joint board meets for a year at each of the university centers in rotation.¹

After the dissolution of the Federal Victoria University, the charters of the four northern universities provided for their coalition to maintain standards for admission and degrees, and to make possible interchangeable attendance at these universities.² An alteration of a statute or ordinance relating to these matters, proposed by any one of these universities, can not become operative until it has been communicated to the other three universities. If any of the universities object, the question is to be considered by a joint committee of the four universities. In default of agreement, any of the universities may make a representation to the King in council. In this event without the allowance of the King in council the statute or ordinance does not become operative.

The charters make it the duty of each of the universities to co-operate with the others by means of a joint board for the regulation and conduct of matriculation examinations. The present statutes provide that the board shall consist of 20 members, 5 to be elected annually by each of the four universities with power to coopt 5 persons of educational experience. The joint board is to determine the conditions and subjects of the examination, together with possible exemptions. The senate of each university may exempt from the matriculation examination candidates for a degree whom it judges qualified by higher study. Each university has the power to require a standard higher than that of the matriculation examination, to exercise its judgment with reference to certain optional subjects, and the acceptance of exemptions recognized by the board, and to admit unmatriculated students to such classes as it thinks fit.

It will be seen that the coalition of the northern universities is a reflection of that in Scotland, but not so closely bound by the letter of the law and showing a tendency to emphasize the individualism of the institutions.

Affiliation and recognition may be counted as vague or initial degrees of coordination. As early as 1875-76 Durham affiliated two small missionary colleges.³ The institution applying for affiliation must satisfy the senate of the University of Durham that "provision has been made for its establishment on a permanent and efficient footing and for its government."

¹ For some time a draft ordinance by the four university courts increasing the powers of the joint board and affecting the regulations as to preliminary examinations has been under consideration.

² Cf. Ch. IV, "The New or Provincial Universities," p. 108, *passim*; p. 111.

³ Codrington College, Barbadoes, and Fourah Bay College, Sierra Leone.

The senate must be satisfied that—

the teaching staff of the college is adequately qualified for the training of students in subjects set for examination by the university in the faculty or department in respect of which the application for affiliation is made. The equipment of the institution in buildings and apparatus must also be satisfactory.

Students properly certified by the affiliated college as having passed the matriculation and public examinations of the university, and as having fulfilled the conditions of the senate as to residence, attendance, and conformity to discipline required of students of the university, are registered as matriculated students and receive the degrees of the university.

At the same time that Durham was taking this action the report of the commissioners on Scottish universities of 1876 shows that they were considering various plans of affiliation between St. Andrews and a proposed college at Dundee.¹ The commissioners, influenced by the disadvantages of the reduplication of the arts chairs in Dundee and in St. Andrews, favored a plan to establish at Dundee a college affiliated to the university, the professors of which should be members of the faculties of arts and of medicine of the university, but which should be devoted entirely to applied science and to medicine, leaving the literary moiety of the arts faculty in St. Andrews.

The universities (Scotland) act of 1889 gave a vague definition of "affiliation" as "such a connection between an existing university and a college as shall be entered into by their mutual consent, under conditions approved * * * by the universities committee." A college for the purpose was to be an institution of higher learning "established on a permanent footing and sufficiently endowed in the opinion of the universities committee." A permissive provision was suggested for the representation of the university court on the governing bodies of affiliated colleges, and of the governing bodies of affiliated colleges in the university court, with the proviso of a limitation of the rights of the representatives to sit and vote on particular subjects. This plan of affiliation has never been carried out exactly in Scotland.

Work done at institutions outside the universities is allowed to qualify for degrees. The university courts determine which institutions are to obtain the privilege. They first inquire whether their work is up to university standard and require that the class fee shall be not less than that of the university. The university court retains the power to dissolve the connection. In Scotland this is not called affiliation but simply recognition of outside bodies. In England, Oxford and Cambridge have "affiliated colleges," "affiliated institu-

¹ Cf. p. 197.

tions," and "approved universities." The relationship is established and dissolved by Oxford and Cambridge at will.

The privileges of affiliation granted under conditions set forth by the two universities to members or graduates of affiliated institutions consist of exemptions from certain examinations and a shortening of the term of residence at the university. The charters of the new English universities give them powers to affiliate colleges and institutions or parts thereof. The privileges and the conditions of affiliation are similar to those at Oxford and Cambridge, though generally the ordinances of these universities add more specific requirements. They demand that the majority of regular students in the affiliated college are of the age of 16 years, that the university be represented on the body determining the courses of study submitted for approval by the university. They demand that the approved courses be equivalent to those of the university, the right of inspection by the university; and its satisfaction as to the qualifications of the teachers conducting the approved courses.

There is a slight but suggestive interrelation of all the English universities not constituting affiliation but a sympathetic reticulation. The charters of the new universities authorize the appointment of representatives upon other educational bodies. The older universities already had representatives upon numerous colleges, schools, and committees. The new universities follow their example most extensively.¹ Reticulation underlies the coordination of the higher institutions and is an attempt to extend it to all educational bodies. It is a rising into consciousness of a subconscious national system not yet legally organized.

The manifold experiments in coordination impress upon one several outstanding features. The value of educational unification has been learned to secure economy, efficiency, and power. It is an example of the modern movement toward cooperation and combination in the business world. No institution can remain absolutely independent and isolated. There is a clear differentiation between the business world's and the educational world's application of "combination." The former, true to the idea of a university as a society of teachers and scholars, "a corporation not conducted for financial profit," in any coordination of a *geistlich* corporation takes care not to commit it to a mere financial board of control, least of all a paid board. Indeed there is no case of the kind in education, high or low, in Great Britain.

Financial unity is kept subsidiary to educational unity. The history and genius of each institution is respected. Representation

¹ Leeds has representatives upon the courts of Bristol, of Liverpool, and of Sheffield; all universities have representatives on the general medical council and various local education committees, schools, and the Workers' Educational Association.

is given to each one. Even in the closest coordination by financial incorporation, as in the proposed reconstituted University of London, the constituent bodies are represented in the supreme governing body and in the faculties in which they are concerned. In every case the faculty is represented. Coordination is effected in large districts having common interests corresponding to American States or great urban districts. The instances are Scotland, the empire of the north in England, Durham and Northumberland, and London. Mere affiliation does not conform to the above principles and practices. It may be an initial movement toward coordination. Generally it is an arm's length arrangement, sometimes reaching throughout the Empire and to foreign countries. It represents an emerging world-wide republic of letters.

Chapter XIV.

APPLIED SCIENCE AND PROFESSIONAL EDUCATION.

The question whether applied science should have a place in the universities and colleges or in separate institutions has been settled in Great Britain by the incorporation of applied science in the teaching of every university and university college.¹ This unanimity in practice has only been arrived at recently, and after the earlier development of powerful separate institutions. By the middle of the nineteenth century Newman had formulated the doctrine, which gained great acceptance, that a university was not to teach anything useful, though it involved him in inconsistency and difficulties in his embracing a college of medicine in his Irish university. At the same period the supposed antagonism between the classics and science made for separate institutions. The example of Germany in the establishment of its *Technische Hochschulen*, apart from the universities, with the right to confer the degree of "Doctor of Engineering Science" had its influence in the same direction.

Huxley, the protagonist, in the seventies, of science versus classics, enunciated the principle that applied science is essentially in the university sphere when he said:

I often wish that this phrase "applied science" had never been invented. For it suggests that there is a sort of scientific knowledge of direct practical use, which can be studied apart from another sort of scientific knowledge which is of no practical utility and which is termed "pure science." But there is no more complete fallacy than this. What people call applied science is nothing but the application of pure science to particular classes of problems.²

Despite the wish of Prof. Huxley, the phrase "applied science" was so apposite it gained increasing currency. Indeed, the occasion upon which he made the remark was due in part to the appeal of the phrase to the founder of Mason's Science College.³ In the coinci-

¹ Cf. Chs. VI, "Technical Colleges and Schools;" XIII, "Coordination of Institutions;" I, "Oxford, Cambridge, Durham," pp. 85-86.

² Address at the opening of the Mason Science College, Birmingham, Oct. 1, 1880; cf. The Proposed University of Birmingham, by Prof. E. A. Sonnenaschein, Nov. 15, 1898. For definition of "applied science," cf. Ch. IV, p. 126.

³ Mason, Josiah. A Biography, *supra*, p. 181.

dence of an age of science and an age of industry the phrase opened the purse of the captain of industry and pointed out the extending domain of the professor of science. Applied science emphasized the teaching of the principles rather than the practice of an art. In English usage it stands for instruction in higher education in a professional school on a par with those of the ancient professions. Technical and polytechnic schools are chiefly secondary schools emphasizing the art or practice and graded off in their elementary departments into trade schools. Applied science includes the training of the engineer as the member of a profession; the technical school the training of the mechanic as an artisan.¹

Only recently has the confusion of ideas and terms begun to clear itself up, and more especially in connection with the founding of the new English universities.² In the merging of Mason's Science College into the University of Birmingham, Prof. Sonnenschein presented the idea:

Let us then widen the term "technical education" so as to include all those special studies which prepare men for earning their bread in a profession; or, better, let us substitute a new term for it and speak of professional education and professional schools or colleges, which, being above the level of secondary school work, should be grouped around the faculties of a university and closely associated with them in government and teaching.

Prof. Sonnenschein anticipated what has since been realized, a modern university, broadened by the definition of technical education, consisting of a college of arts about which should be a group of professional schools in education, commerce, agriculture, architecture and the allied arts, sanitary science and hygiene, and applied science, as well as theology, law, and medicine. So rapidly was this ideal realized that the vice chancellor of the latest of the new universities at its opening declared that in Great Britain the modern universities recognized at least half a dozen new professions in addition to the four learned professions of teaching, of divinity, of law, and of medicine, embraced in the universities of the Middle Ages. The studies like agriculture and engineering have also made good their footing in Oxford and Cambridge. He contended that there was historic ground for embracing the study of all professions within the scope of a university, inasmuch as the medieval universities "had always very practical ends in view," and prepared their students for the learned professions then existing.³

Speaking broadly the ancient professions have been considered as forms of applied science. In the modern applications of the physical and biological sciences to medicine this usage is quite evident. It

¹ Cf. Ch. III, "University of London, pp. 91-92.

² Cf. Ch. IV, "The New or Provincial Universities."

³ Owen, Sir Isambard, *supra*, pp. 23, 24.

is not so striking to the popular mind in the case of law and theology, unless one return to broader definitions like that of Bacon when he said, "Theology is the haven of all the sciences." Increasing appreciation of this definition, the tendencies to unification and the methods of coordination of institutions, have enabled even secular universities like London and Manchester to have faculties of theology, and to overcome the *odium theologicum* and the difficulties of denominationalism.¹ Excepting London, all British universities which offer degrees in divinity rank the theological faculty as a superior faculty. The fact that the faculties of theology, of law, and of medicine have always been accounted as superior faculties to the arts faculty, and in ordinary course the arts degree, preliminary to the professional degree, reinforces the notion that in the higher sense these are faculties of applied science.

The guildlike organization of the professions of law, of medicine, and of theology, with power to set their own standards and to admit and to dismiss members independent of the State, has tended to subordinate the professor to the practitioner. They tended to limit their university faculties to the teaching not of principles but of practice. They set up their own schools independent of the universities. The new and still "open" professions have started to follow their example. We have the Institute of Civil Engineers, of Mechanical Engineers, and of Electrical Engineers, and the Pharmaceutical Society of Great Britain, setting their own examinations and standards.

The legal profession has retained complete control of legal education by its sole power to license solicitors and admit to the bar through membership in the law societies and the Inns of Court. They make some concessions to holders of university degrees. The tendency to secure a more intimate relationship between the profession and the universities is marked. There has long been an agitation, especially in London, for the university to gain a larger control of legal education, and in the Provinces the law society's subsidized local boards of legal studies tends to grow into the law school of the local university.²

In medicine 18 universities and certain professional colleges and societies are legally entitled to test candidates and to confer degrees or diplomas. On the face of it medical education would seem to be in the hands of the teaching bodies. In fact, it is controlled by the profession through the general medical council established by an act of Parliament of 1858 to distinguish qualified from unqualified practitioners. The medical profession is not like that of law, a

¹ Cf. Ch. IV, "The New or Provincial Universities," pp. 112-118.

² Hazeltine, Harold D., "Legal education in England" (Reprint, Transactions of the American Bar Association, 1909); p. 891. Cf. Richards, H. S., "Legal education in Great Britain," Bulletin, United States Bureau of Education.

close corporation, having a monopoly of practice and protection against the competition of the untrained. The public are free to seek "medical aid" from the unqualified practitioner, who is only under certain disabilities in the use of titles and giving valid certificates. The "qualified" men have official recognition, but are subjected to central educational and disciplinary control. They are "registered practitioners." The general medical council has of necessity grown into a council of education, a board of registration, and a court of medical conduct. It has become the determining influence in medical education, though—

"its powers only enable it to visit and inspect examinations, and to call for information as to the courses of study; it is not authorized to prescribe or to amend either. It can not itself disallow an 'insufficient' curriculum or an 'insufficient' test; it can only report its opinion to the privy council."¹

The general medical council represents the State on behalf of the public through members appointed by the Crown, the medical profession itself through members elected by the registered practitioners residing within the Kingdom, and the universities and bodies which educate and examine in medicine through members appointed by the several bodies. Thus the constitution of the general medical council interweaves happily the educational, professional, and public interests.

Only recently has dentistry been admitted to be a profession and as a consequence the belief entertained that the university ought to train for it.² It is treated as a subsidiary branch of medicine and the instruction, when given in a university, committed not to a faculty but to a section of the medical faculty or to a department or school.

The dentists' act (1878) provided for the registration of dentists by the general medical council and gives the council powers similar to those in the case of medical examinations of inspecting the examinations of the licensing authorities. It parallels for dentists the provisions for qualified medical practitioners. In view of the fact that the law does not prohibit any person from practicing dentistry, and that legally qualified medical practitioners may do so, it is reported that there are only about 3,000 qualified dentists, and perhaps from 25,000 to 35,000 unqualified practitioners.³ In this state of the law the largest part of dental education is carried on outside the universities. As yet to secure students who will prepare for the standards proper to a university degree, only five English universities are bold enough to lead the way by giving a degree in dentistry.⁴

¹ MacAllister, Donald, president of the Gen. Med. Council. "Introductory Address on the General Medical Council," Manchester, 1906, p. 13, *passim*.

² Cf. Ch. IV, "The New or Provincial Universities," p. 114.

³ Final Rep. of Commission on Univ. Educ. in London, *supra*, pp. 141-145.

⁴ Birmingham, Bristol, Leeds, Liverpool, Manchester, London only gives the post-graduate degree of M. S. in dental surgery.

In theology the licensing of the ministers is absolutely in the hands of the different churches. Theological education traditionally committed to the universities, but by divisions in the church largely withdrawn and placed in church institutions, is again turning back to the universities. Among the tokens of the movement are the opening of the theological degrees at Cambridge to those who are not members of the Church of England, the agitation at Oxford to follow the example of Cambridge, and the formation of theological faculties, or the inclusion of theological subjects among those for the B. A. degree in secular universities. The theological faculties of Victoria University, Manchester, and of the University of London are notable successful experiments of securing the cooperation of different denominations in secular universities. The testimony is that a sectarian issue has never yet emerged in either of them.¹ The day of the isolated theological school is passing. Twenty-eight out of thirty-six theological colleges of the Church of England are affiliated to or located at the seat of a university.² There has been a series of removals of theological colleges to university centers, as in the case of Mansfield (Congregational) to Oxford, Westminster (Presbyterian) and Cheshunt (Countess of Huntingdon Connection) to Cambridge.³

The force of the centripetal movement that attracts professional education old and new to the universities may be judged by the prejudices and difficulties which have had to be overcome in theological education.

But the supreme triumph of the movement has been in the case of applied science, now attached to every university in Great Britain and Ireland and almost without exception throughout the universities of the British dominions. In addition to the antagonism of ancient classical institutions to the new scientific ones, and the force of the example of the separation of the technical *hochschulen* from the universities in Germany, were the establishment and endowment of technical schools by aroused commercial and industrial interests and by the distribution of public (whisky) money 1890 for technical education.⁴ The rapid development at the capital of wealth and of the Empire of the Royal College of Science into the Imperial College precipitated the question of making it an independent technological university and the crown of the technological schools

¹ Garvie, Rev. Dr. Alfred E., "The Christian Churches, the Theological Colleges, and the National Universities," *Contemporary Rev.*, Nov., 1913.

² *Handbook of the Theological Colleges of the Church of England and the Episcopal Church in Scotland*, Longmans, 1913.

³ Cf. tables for universities giving theological instruction.

⁴ Cf. Ch. VI, "Technical Schools and Colleges."

throughout the country. This would have brought schism into the evolving national school system and led to overlapping of universities in London, and would have contravened the historic idea of a university. After repeated investigations by commissions and departmental committees, this general notion has been rejected. It has been decided that the place of the Imperial College is in the one University of London.¹ Applied science inseparable from pure science comes to its proper place in the sisterhood of professional schools in a university. According to Lord Rosebery, "This is one of the giant strides which has been made in university development during the last 30 years."²

The teaching profession, the youngest of all outside the universities, though one of the oldest in history, has just begun to organize itself by the formation of the Teachers' Registration Council somewhat along the lines of the general medical council.³

The council announces:

The register itself is but the beginning of a movement toward the promotion of self-government and self-organization such as will place the work of teaching on a truly professional base. * * * Matters concerning salaries, pensions,⁴ and conditions of work such as are of general interest to all teachers will in due course be considered. * * * It is anticipated also that the council will be able to organize systematic research into educational problems and so play an important part in the development of a true science of education.

¹ Final Report of the Commissioners, London, *supra* (ed. 6717), pp. 32, 83, 117. Cf. Ch. III, "University of London," pp. 78-79.

² "Address to the Royal Technical College, Glasgow, after the affiliation of the college with the university." *The Times*, Dec. 12, 1913. See Ch. XII, "State Aid and Visitation," p. 190; Oxford's receipt of Aid for Engineering Science. Cf. the combination of departments of engineering of Harvard, Mass., and Mass. Institute of Technology, which President Lowell said "constituted the most important movement toward the conservation of educational forces that the country ever had known." *N. Y. Times*, Jan. 10, 1914.

³ Constituted by order of the council in 1912, under the Education (Administrative Provisions) Act of 1907, and succeeding a conference of representatives of 37 associations of teachers unanimously favoring the project. For a report of the conference and of the secretary of the board of education, cf. Parliamentary paper (Cd. 5726). Thus concluded a series of efforts to form a register of teachers beginning in the year 1846. "The unification of the teaching profession" is aimed at by drawing the membership from every form of teaching work. The council consists of 44 members, all of whom are teachers or have been teaching. The 11 universities in England and Wales and 42 associations of teachers are represented on the council, 11 members from each of the four groups—University teachers, elementary school teachers, secondary school teachers, technological and specialist teachers. A certificate of registration renewable every 9 years may be issued upon the payment of one guinea to persons 25 years of age, meeting certain conditions as to attainments, training in teaching, and experience. The qualifications required to satisfy the condition of "attainments" are the degree or diploma of an approved university or other institution, or a certificate by the board of education, or of other approved examining body, and a course of study of three academic years of full-time day instruction or equivalent in subjects satisfactory to the board. Till 1921 "satisfactory experience alone" is required. Up to October, 1915, the total of applicants for registration was only about 12,000, out of perhaps 150,000 eligible to apply. The war and the withdrawal of some 8,270 teachers from school work to serve with the forces account in part for the slow registration.

⁴ Cf. Ch. XI, "Provisions for the Faculty," pp. 188-189.

If these ambitions of the council can be fulfilled, not only a profession of education will be organized on a par with the other professions, but also the now inchoate faculties of education in the universities and colleges will become full faculties. At present, Edinburgh and Manchester excepted, there is no faculty of education in any university in the United Kingdom and no specific degree.¹ This does not mean that the universities which have from the beginning prepared the masters for the "public schools" have not fallen in with the movement for the training of teachers, both elementary and secondary, at the university. As early as 1878 Cambridge appointed a teacher's training syndicate. Under its superintendence lectures are given and examinations are held by the university in the theory, history, and practice of education, including method, school management, and practical teaching. The test for practical efficiency requires training for at least a year in some training college inspected and recognized by the syndicate or teaching for a year in a school recognized for the purpose.² In 1891-Cambridge took a forward step by opening a training college for schoolmasters in a primary department. A three years' course calling for hard training in a combination of certain university studies and professional training leads to the B. A. degree. Cambridge asserts that "the testimony of 20 years is decidedly encouraging" in this attempt to bring university-trained schoolmasters into the elementary schools.

In 1892 Oxford also established a delegacy to encourage the training at the university of teachers in the public elementary schools. Students entering in 1912 and thereafter will have a course of four years, the fourth year devoted wholly to professional training.

In 1898 Cambridge established a department of secondary training for which Oxford now also provides.

The Scotch universities³ without faculties or specific degrees in education, by means of a professorship or lectureship in education, and by cooperation with the provincial committees for the training of teachers, provide a four years' course, so arranged that the first three years may be given almost wholly to university work and the last year to professional training.

Even the new English universities, excepting Manchester, have no faculties or degrees in education, but have strong departments of

¹ Cf. Ch. IV, "The New or Provincial Universities," p. 115. A Conference of Representatives of the General Councils of the Universities of Glasgow, Aberdeen, and Edinburgh, Oct., 1915, "was of opinion that a faculty of education should be established in each university," that a postgraduate professional degree in education—bachelor of education—should be instituted, and also a doctorate in education. Cf. Ch. II, "Scotch Universities," pp. 64-65.

² At present some 30 training colleges are recognised.

³ Edinburgh has just established a faculty of education and the degree B. Educ.

education and are in cooperation with the board of education and training colleges.¹ This is true also of the University of London.²

It is obvious that the universities, the original home of the teaching profession, tend with the more distinct differentiation of professions to set up a "superior faculty" of education and to embrace a professional school of education among the schools of other professions. There is confirmation for the practice, increasing in the United States, of arts colleges including departments of education with their professional work for arts degrees. The inclusion of the training of elementary as well as secondary teachers to give the touch of the university to all grades of the profession, the close alliance of the university with a certificating board of education, and the affiliation of the separate training colleges foreshadow the disappearance in this as in the other professions of the isolated school. The indication is that the place of a normal school or college is in a school system culminating not in it, but in a university.³

The other partially organized professions, like the fine arts, music, and journalism,⁴ with the rare exception of music, have no formal faculty. Their principles and history have found a place as a branch of university study in the faculty of arts, but their technique has been left to recognized teachers and affiliated organizations. Oxford, Cambridge, and London have always awarded degrees in music, but no faculty of music has survived except a nominal one in London. The latter the commission recommend shall be dissolved as unnecessary so long as the teaching of music is in the hands of "recognized" teachers in the several strong musical colleges in London.⁵ The degrees are to be continued as "external" degrees. In Scotland, only Edinburgh has a faculty of music and a chair of fine art. In the new English universities only Manchester has a faculty of music and Birmingham a chair. In general the universities acknowledge fine art and music as susceptible of being academic disciplines and worthy of recognition either for a B. A. or specific degree. The instruction is given chiefly in the arts faculty and the executant work

¹ Cf. Ch. IV, "New or Provincial Universities," p. 124.

² Cf. Ch. III, "University of London," pp. 86-87.

³ Cf. Ch. II, "Scotch Universities," p. 49; also cf. Smith, J. C., Chief Inspector, Report (1912-13) Training of Teachers (Scotland), Wyman & Sons, London, 1914, p. 3; 1st Normal Coll. Dundas Vale, Glasgow, 1834; by 1887 the churches had 8 training colleges, but closer connection with universities after 1878, when abler students of training colleges were encouraged to attend universities, and 1887-88 leaving certificate stimulated demand for higher education and training period extended; universities also asked why not undertake whole training; 1896 local committees for training created and in 1905 reconstituted in four provincial committees with representatives of universities of central institutions on university level and of churches where they were concerned; and university course extended from three to four years.

⁴ Cf. Ch. IV, "The New or Provincial Universities," p. 118.

⁵ Rep., *supra*, pp. 150-152, 181.

in affiliated institutions. A university without opportunity for the study of fine art and music is exceptional and excuses its shortcoming because of lack of funds.

The thesis stands that applied science, as contradistinguished from mechanic arts, belongs in a university as one of its professional schools, and that all the professions, old and new, look to the universities as the center for professional or advanced instruction in the science of the profession which is to be supplemented by gaining the art of the profession in practice regulated by the organized profession.

Chapter XV.

ADVANCED STUDY AND RESEARCH WITHOUT GRADUATE SCHOOLS.

From the seventeenth century onward the British universities were absorbed in teaching undergraduates. So completely was the function of a university to advance knowledge lost sight of that research was not mentioned among the 12 points of reform for Oxford, urged by Sir William Hamilton in the *Edinburgh Review* (1831-1836). The report of the commission of 1850 did not dwell upon the subject. But, beginning with Bonamy Price in 1850, there has been a line of advocates of the promotion of research as a first duty of a university.¹ Among them are no less names than those of Matthew Arnold, Mark Pattison, and Jowett. By 1877 the universities of Oxford and Cambridge act plans for provisions for "the doing of work or the conducting of investigations within the university." Outside academic circles, the demand has been constant and increasing that the universities should make contributions in the field of research, especially as related to the industries, in view of the rising competition of Germany and the United States and the example of their universities.² The war has intensified this appeal, and deepened the conviction of the universities and the Nation in the pursuit of this policy.

In the face of current criticism on the insufficient provision for advanced study and research, one is happily disappointed by what has been attempted or accomplished as shown by a mere glance at some of the facts. All the universities now make a feature of announcing the opportunities they offer for advancing study and research. Oxford and Cambridge include entire chapters upon the subject in their handbooks. In 1896 Cambridge established courses of advanced study and research and made it possible for the graduates of other universities to proceed to the Cambridge B. A. or LL. B. In 1912 the statute substituted the term "research student" for "advanced student" and broadened the terms for admission

¹ Price, Bonamy, "Suggestions for the Extension of Professorial Teaching in the University of Oxford, 1850"; cf. Tillyard, *supra*, pp. 86-92, 175-179, 200, 326; cf. Curzon, "Principles, etc.," *supra*, Ch. IX, "Encouragement of Research."

² Cf. Lockyer, *supra*, pp. 5-13, "The endowment of research, 1873"; cf. Ch. VI, "Technical Colleges and Schools," and Ch. XIV, "Applied Science and Professional Education."

for such students. A research student, ordinarily a college graduate, may receive a "certificate of research" after three terms of residence and the acceptance by the degree committee of a dissertation upon the research done by him in the university. A student who has obtained a certificate of research and has been in residence at least six terms may proceed to the degree of B. A. or LL. B., and thereafter in course to the degree of M. A. or other advanced degrees.

In 1895 Oxford instituted the degrees of bachelor of letters (B. Litt.) and B. Sc. to encourage special study and research among both its own graduates and other students likely to pursue advanced studies with profit. Not less than eight terms of residence are required. Unlike degrees in arts, these degrees do not make one eligible to share in the government of the university by membership in convocation. In 1900 the university further instituted the higher degrees of doctor of letters and doctor of science, awarded for published work containing an original contribution to knowledge. Out of 1,241 other degrees than honorary conferred in 1912-13 the total number of these research degrees was only 23. It is not fair, however, to gauge the extent of special study and research by these degrees. Many of the final honors schools for the B. A. involve special and advanced studies, and this is also true in the examinations for degrees in law and in medicine. Again, special and advanced lectures are accounted one of the most distinctive features of Oxford teaching. Comparatively recently courses leading to diplomas or certificates have been introduced, with the general object of providing for special lines of study supplementary to the ordinary curriculum for the B. A. or B. M. degrees.¹

Both Cambridge and Oxford offer ample opportunities for research, on account of the specialists in their own subjects among the teachers as well as the libraries, the laboratories, and the museums. A university policy of research has slowly developed at Oxford and Cambridge since the commissioners' statutes of 1882 provided for a number of college fellowships specially allotted to advance study or research. They were intended chiefly as prizes for excellence in scholarship. Any graduate of Cambridge or Oxford is eligible for election. The yearly income of a fellowship is not less than \$1,000 and certain perquisites. In ordinary cases the tenure is six or seven years, and the holders are under no obligation to serve their colleges or even to be in residence. For financial reasons the number of "prize" fellowships has rarely exceeded 20 at Oxford.

¹ At present diplomas or certificates are given for a course extending over a year or more in geography, education, economics and political science, mining and engineering, anthropology, forestry, classical archaeology, rural economy, public health, and ophthalmology.

Some colleges have established research fellowships, tenable on condition of the fellow prosecuting some definite scientific or literary work, the prize fellowships not having been particularly fruitful.¹

Both universities, largely through recent private munificence, have founded university scholarships, usually open only to graduates, in contradistinction to the numerous college scholarships for undergraduates. Oxford has about 50 of these scholarships, of the aggregate annual value of about \$21,150, and Cambridge about 57, of the value of about \$28,000. Each university has also a number of valuable prizes for graduate work.

The relatively small proportion of graduates to undergraduates pursuing studies at the old universities ought not to be taken as a measure of the progress in them of the university policy of research. The specialization possible and the advanced work offered in the honors schools, commonly occupying a fourth year of study, in addition to the three years for the ordinary B. A. degree, and the fact that the M. A. degree does not require further scholastic work or residence, added to the tradition that culture and not investigation is the object of the university, must be taken into account.

In Scotland the universities commission of 1889 adopted regulations for the encouragement of special study and research and for the appointment of research fellows. Accordingly, the four universities admit as research students graduates of Scottish or of other universities or persons not graduates who give evidence of fitness to engage in some special study or research. The title of research fellow may be conferred with or without a stipend on specially distinguished students. The number of these students has been inconsiderable.²

The four universities have over 170 scholarships for graduates, of an approximate aggregate value per annum of \$65,000.³ These scholarships have practically been given within the last 50 years and are administered by each university chiefly for its own graduates. There are also several scholarship endowment funds open to the graduates of any of the Scottish universities, not including the Earl of Moray endowment for the promotion of original research⁴ at Edinburgh, and the munificent research scheme of the Carnegie trust. The latter alone in 1913-14 awarded 152 research fellowships, scholarships, and grants, worth \$50,885.⁵ In addition, the trust

¹ Cf. Ch. I, "Oxford, Cambridge, Durham," pp. 31-32.

² *Id.* *g.*, Glasgow, 1913-14, 20 students.

³ St. Andrews about 22 scholarships, of about \$7,000; Glasgow about 58, of about \$21,500; Aberdeen about 23, of \$8,000; Edinburgh about 70, of \$30,000.

⁴ The available annual income about \$3,900.

⁵ In the distribution of awards over the four university centers St. Andrews received 3 fellowships, 10 scholarships, and 18 grants, worth \$9,095; Glasgow, 7 fellowships, 8 scholarships, 32 grants, worth \$18,550; Aberdeen, 3 fellowships, 9 scholarships, 21 grants, worth \$10,610; Edinburgh, 7 fellowships, 14 scholarships, 25 grants, worth \$17,630. Cf. Ch. II, "Scotch Universities," p. 51.

decided in 1914 to offer an annual essay prize of \$500 for competition among graduates of the universities who have not been fellows under the trust, to encourage postgraduate study and research within the departments of history, of modern languages, and of literature.

The Scottish universities also have stimulated graduate work by advanced degrees, though there are anomalies in the titles, due in part to the fact that the M. A. is conferred as a first degree. The bachelor of divinity is a second degree to which an M. A. is a prerequisite, and residential graduate work is required, nor can it be conferred *honoris causa tantum*.

The first medical degrees are bachelor of medicine (M. B.) and bachelor of surgery (Ch. B.), and these must be taken together. The second degree is that of doctor of medicine (M. D.) or master of surgery (Ch. M.), as the case may be, requiring not less than one or two years of graduate study or practice, and the passing of prescribed examination and submission of a satisfactory thesis. After 1908 the universities offered higher degrees in arts and science and forbade the giving of them *honoris causa tantum*. The degrees were doctor of science (D. Sc.), doctor of philosophy (D. Phil.), and doctor of literature (D. Litt.). They are open to graduates with honors of not less than five years' standing in Scotch or recognized universities. In case the graduate is a "research student," he must spend two terms in each of two years in the university in satisfactory work. All candidates must present a thesis recording original research. In lieu of a thesis, an engineer may present an original design of work which has been executed. The number of advanced degrees conferred by the four universities is very small, but increasing in medicine and science.

All the charters of the six new English universities specify that the university shall further the prosecution of original research in all its branches. Therefore, these institutions from the beginning have laid great stress upon research and graduate work. They have secured endowments for research professors and schools, like the professorship of biochemistry in Liverpool and the school of tropical medicine.¹ It is expected that the spirit of inquiry will be encouraged in all departments by teachers who are contributing publications in research. These universities make a point of reporting separately the number of students taking "postgraduate" courses. Beginning with the M. A., they have made the higher degrees not merely nominal or honorary. The master of arts must be a bachelor of the university of one year's standing who has graduated with honors in arts, or passed a prescribed examination, or presented a satisfactory thesis. They have instituted master's research de-

¹ Cf. Ch. IV, "The New or Provincial Universities," pp. 120-121.

degrees for those who have passed degree examinations of approved universities when they have conducted research in the university for at least two years. They even admit candidates who have not passed degree examinations if the senate is satisfied that they have sufficient education to carry on successful research for three years.

The Litt. D., LL. D., and D. Sc. are conferred on graduates of not less than four years' standing who give sufficient evidence of conducting original research. Research students are allowed the use of special laboratories at a reduced fee. There are numerous research fellowships, studentships, and scholarships for advanced study. The University of Bristol is even offering a research B. A. or B. Sc. degree for three years of original research in lieu of the pursuit of a curriculum. Herein Bristol is following the example of London, which offers the B. Sc. degree to be taken "by research" by internal students. Indeed, the University of London offers great opportunities for postgraduate study and research through its numerous schools and institutions. External graduates, graduates of other approved universities, and persons who have passed examinations equivalent to those required for a degree may enter as internal students for the degree of M. A. and for the degree of doctor in the several faculties. The course of study for these students covers at least two years.¹

In addition to the several research institutions like the physiological laboratory,² or the Lister institute of preventive medicine, the incorporated colleges and schools of the university encourage research in all departments. The university requires the provision of facilities for advanced work and research wherever it appoints a teacher as a university professor or reader. Recently the university has received a number of funds for the promotion of research.³

The university has hardly a dozen scholarships and studentships open to graduates; nevertheless, the colleges and schools of the university impregnated by the spirit of the university had about 1,359 postgraduate students enrolled in 1913-14.

The place of graduate work and research in a university has been studied afresh by the commission on university education in London (1913). In the hearings before the commission all sides of the question were presented. There were advocates of a "super-university." They called "the true university work not that of undertaking teaching up to the bachelor stage, but of advancing research and higher learning." They proposed a series of institutes under control of the university, grouped round the headquarters of

¹ In July, 1912, there were some 90 such students.

² Cf. Ch. III, "University of London," pp. 85-86.

³ Charles Graham medical research fund; Dixon fund for scientific investigation; the Ratan Tata fund.

the university, but detached from the different colleges. The advocates of this proposal had a special motive of extending the external side of the university. They made two admissions well-nigh fatal to their theory. When they said "the teaching up to the stage of the bachelor's degree in most subjects may be very well left" to the colleges, and they were not able to say all subjects, they admit there can be no clear cleavage between the college and the university. They made a more damaging admission in saying—

it is most essential that teaching should not be divorced from research, and that in every school of the university the teachers and students should be actively encouraged not only to promulgate what is at present known in their subject, but also to extend the bounds of knowledge.¹

The commission summarizes its conclusions against proposals which tend to break up a close association of undergraduate and postgraduate work as follows:

A hard and fast line between the two is disadvantageous to the undergraduates and diminishes the number who go on to advanced work. The most distinguished teachers must take their part in undergraduate teaching, and their spirit should dominate it all. The main advantage to the student is the personal influence of men of original mind. The main advantage to the teachers is that they select their students for advanced work from a wider range, train them in their own methods, and are stimulated by association with them. Free intercourse with advanced students is inspiring and encouraging to undergraduates. The influence of the university as a whole upon teachers and students and upon all departments of work within it is lost if the higher work is separated from the lower. Advanced instruction of a specialized kind must be provided for occasional students who are already engaged in a profession or calling.

Caution is given against making all kinds of research of equal value. Research students must have the wider point of view of a liberal education. Research professors need a sympathetic relation to other branches of knowledge and must be kept to a just appreciation of the limitations as well as the possibilities of their own specialty. "The establishment of research professorships *eo nomine* would produce the impression that other professors would not be expected to make additions to knowledge."

The fact that no British university has organized a graduate faculty despite their recent interest in and study of the organization of research brings home to one the uniqueness of the American constitution of graduate schools and incipient superuniversities. To be sure one has to take into account the British absence of a horizontal grading or stratification of education. There is a system of overlapping, or better, of interlocking, of all the grades, primary, secondary, collegiate, and university. It represents a growth. The

¹ Commission Rep., *supra*, pp. 28-30, 86, 72. Cf. Ch. III, "University of London," pp. 91-92.

connections are more vital and less mechanical than the American system. It would therefore be unnatural for them to segregate graduate work. Nevertheless, one raises the query if the more or less artificial system of American grades has not been carried too far in superimposing upon the colleges a kind of superlative graded school, albeit a large amount of the graduate school curriculum is offered to undergraduates.¹ The British plan of encouraging advanced studies, and giving opportunity for specialization in their "honor schools," and their quasi-combined undergraduate and professional courses, disseminates the research spirit through the entire student body. "The superior faculties"—the strictly graduate faculties—are not pushed on one side as merely professional faculties, but are infiltrated with the same spirit in conjunction with the arts faculty.

There has been a rapidly rising appreciation of the need and value of research by the British Government. A few illustrations will show the Government's increased utilization of experts and grants in aid of research. First among these comes the royal commission for the exhibition of 1851, among whose many activities is the institution of their scheme of science research scholarships.² The Government committed itself anew to subsidies to investigation and research in the development and road improvement funds act of 1909, guaranteeing to the fund \$14,500,000 for the period up to the end of the financial year 1914-15. The development commission has granted large sums to the universities and colleges for the initiation or assistance of schemes of agricultural and other economic instruction and research. The commission has recommended a continuation of the fund.³

Under the national insurance act (1911) in 1913 an annual grant of about \$285,000 became available for research. A medical research committee with executive functions was appointed for the purpose of dealing with the money. Also, an advisory council was appointed upon nomination of distinguished specialists, and by each of the universities and other learned bodies. The duty of the advisory council is to make recommendations to the minister responsible for national health insurance before he gives his final assent to the medical re-

¹ Cf. "There is, however, no other division of American university work that has in the past been less sincere and more open to criticism than the so-called graduate schools. It has been assumed that no research work could be done unless there was a formal graduate school, whereas, if research comes at all, it grows naturally out of the work of teacher and student." "Education in Vermont," Carnegie Foundation, Bulletin No. 7, 1914, p. 204.

² The scholarships of the value of \$750 per annum are ordinarily tenable for two years. The scholars are appointed from graduates upon nomination by universities in the Empire; 20 were appointed in 1913.

³ The grants to colleges and institutions in aid of research, investigation, and scholarships in 1914-15 were \$284,825. Cf. Report Development Commissioners, 1914, pp. 8, 55-57.

search committee's scheme for any year. They report upon the various kinds of research work going on in the different parts of the Empire, in America, and in foreign countries. They make suggestions upon the general scope of the research work to be undertaken under the committee's scheme. In 1914 the parliamentary budget contained a scheme for establishing in such available centers as the county towns special departments, where the panel doctor should have it in his power to command any specialist's services that he needed. These would be scientific centers to help and stimulate the practitioner in research. The example of Cambridge in establishing the first research hospital in Britain is being followed by the committee of national research in setting up a research hospital, and also by the establishment of research wards in some of the great London hospitals. Recently the prominence of research as a function of the hospital has been much dwelt upon. Just before the war Mr. Balfour alluded to the happy rivalry for the furtherance of knowledge by researchers in all countries, and, as yet unenlightened by the war, added, "A rivalry far happier than that in armaments, but, he sometimes thought, hardly less expensive."¹

Following the analogy of the advisory committee on aeronautics, established in 1909, and their research work carried out at the national physical laboratory, Cambridge, a committee appointed by the postmaster general reported, in 1914, in favor of the establishment of a national committee for telegraphic research and a national research laboratory.²

Without anticipation of the outbreak of the war, in the first half of 1914, there was a discussion by some 40 distinguished educators and public men of the duty of the State to encourage and reward research more effectively and generously.³ There were different opinions as to the form that State encouragement should assume. Many correspondents believed that successive governments were apathetic and that it was hopeless that any of the schemes proposed would receive at present effective Government aid. Dr. Farnell asserted that:

This apathy toward discovery and research, which is more marked in our country than in Germany, France, or the United States, is a vice of our national (British) temperament, due to a faulty educational system, and the blame attaches to all our educational institutions from the primary school to the highest university.⁴

He prophesied that this apathy would tend to disappear with the realization of how profoundly it threatens the national position.

¹ Balfour, Hon. A. J., "Address at Guy's Hospital," *The Times*, June 4, 1913; Cf., Albutt, Sir. T. Clifford, "Address, St. Thomas's Hospital," *Morning Post*, July 1, 1914.

² "White Paper" (Cd. 7428), *The Times*, June 9, 1914.

³ Cf. series of letters on "Science and the State" in the *Morning Post*, beginning May 25, 1914, with a letter from Provost T. Gregory Foster, Ph. D.

⁴ Farnell, L. B., D. Litt., Rector, Exeter College, Oxford, *Morning Post*, June 26, 1914.

The war has already brought a fulfillment of the prophecy, as the plan of the minister of education mentioned below will show. Dr. Farnell's cure was to indoctrinate collegians and all teachers with respect for discovery and research and to impregnate the mass of citizens with such respect.

Mr. Pease, then minister of education, in presenting to the House of Commons in May, 1915, the estimates for the board of education, and in asking additional grants in the midst of war grants, said:

The war has brought home the realization that it is essential, if Britain is to maintain its position in the world, to create careers for scientific men, to associate industry closely with them, and to promote a proper system of encouragement of research workers, especially in the universities.¹

He proposed the appointment at once of an advisory council on industrial research, a committee of experts to consult with other expert committees, consisting of leaders of industries and advisers possessing knowledge in connection with pure science and science applied to industry. The council will have to advise as to the way in which a sum of about \$150,000 in the estimates for the current year should be spent in training and research work and its distribution among institutions. Mr. Pease anticipated that this comparatively small sum will have to be "enormously increased" in future years by the State.

Government action is reenforced by conferences of representative leaders of industry and of science, both in the Island and the colonies, pleading for closer cooperation of science, industry, and finance.²

The half century's slow progress in the promotion of research in Britain and in the encouragement of it by the State and nation has been brought to a head by the war, with happy auspices for the future. Above the din of battle and the sound of marching hosts the insistent voice of education calls throughout the land, and

"Peace hath her victories no less renowned than war."

¹ "Scheme for the organization and development of scientific and industrial research" (White Paper, July, 1915, board of education, cf. *The Times*, July 27, 28, 1915). New parliamentary grants for the purpose are to be administered by a committee of the Privy Council, aided by an advisory council composed of scientific men and men engaged in industries dependent upon scientific research. The advisory committee is to act in cooperation with the royal and other societies as well as with universities and technical institutions. The scheme is received cordially everywhere, but in some quarters there is criticism that the administration is committed to the Privy Council and not to the board of education.

² *The Times*, Mar. 25, 1915, "Chemists in Industry."

Chapter XVI.

EXAMINATIONS.

A strong and rising tide is running against the examination systems developed and multiplied in the nineteenth century. The reconstitution of the University of London in 1900, by which it ceased to be merely an examining board and began to be a teaching body, marked the turning of the tide.¹ Its height may be estimated by the conviction of the commission for the same institution in 1913 that the external examination is "inconsistent with the true interests of university education, injurious to the students, degrading to the teachers, and ineffective for the attainment of the ends" it is supposed to promote. The commission does not stop with writing this of a purely external examination conducted by examiners who have nothing to do with the instruction of the candidates and who have nothing to go on but the syllabus prescribed for the course of instruction. It adds:

Even the so-called internal examinations of the University of London are practically external, because of the large number of institutions involved and the demands of the common syllabus. A system of external examinations is always based upon want of faith in the teachers.

The remedy proposed is the appointment of teachers who can be trusted with the charge of university education and to dispense with the necessity of the syllabus. The commission goes further in saying that examination should not be the sole test for a degree and that due weight should be given to the whole record of the student's work in the university: "It is absolutely necessary that, subject to proper safeguards, the degrees of the university should practically be the certificates given by the professors themselves." This is a position which contravenes the universal practice of British universities to give degrees upon the passing of three examinations—entrance, intermediate, and final—qualified by certain residential requirements and conducted by a board of examiners, apart from or in conjunction with the teachers of the candidates. The proposition is a move in the direction of the American practice of the award of degrees by the teacher on the candidate's whole record, and is one with which

¹ Cf. Chs. III, "University of London," pp. 68-69, 92-93; IV, "The New or Provincial Universities," p. 107.

there is much sympathy among the teachers in the "public" and secondary schools and professors, especially in the new English universities. These universities occupy a halfway house. As a relic of their conflict in 1902 to meet the objection to "one-college" universities and "one-man" degrees, they provide that "every examination shall include an external examiner, not associated with the university, for each subject or group of subjects with which the examination is concerned."¹

At this moment the culmination seems to be approaching of long study of external examinations in secondary schools in England and of university entrance examinations. The matter has been brought to a head by circular "849" of the board of education to local education authorities and secondary schools, issued in July, 1914.² In making their proposals tentatively the board invited criticism and suggestion, which have become a feature in the educational publications of 1915. The circular is the outcome of correspondence and conference during two years with all the English universities and educational associations concerned. In its main features it is framed upon principles laid down in the report of the board's consultative committee in 1911 on examinations in secondary schools.³ This classic report upon the subject does not lose sight of the broader aspects of examinations as a whole in their influence upon the universities, the professions, and the Government service. The inauguration of the competitive system of examinations all along the line, principally during the decade 1850-1860, and its spread to the present evils is traced. The number of examining bodies and their independence of one another have introduced a multiplicity of separate examinations in secondary schools, conducted by the more numerically important bodies, estimated at nearly 90, which examine.

Circular "849" proposes an annual examination of grant-earning schools by one or more of the university examining bodies, chosen by the school and approved by the board. Provision for two examinations is suggested, and certificates in accordance therewith. The first will be suitable for "forms" in which the average age of the pupil ranges from about 16 years to 16 years 8 months. The examination will be designed to test the results of the course of general education, and will correspond to the present school certificate examinations of the universities. The subjects for examination will be treated as falling into three main groups—English subjects,

¹ A suggestion for a small American college. Cf. case of Univ. Coll. Liverpool in Privy Council, Dec. 17-19, 1902.

² Printed in "The Educational Times and Journal of the College of Preceptors," Feb. 1, 1915, pp. 52-53.

³ Board of education (Cd. 6014).

languages, science and mathematics. The candidate will be expected to show a reasonable amount of attainment in each of these groups, and will be judged by this test rather than by his power to pass in a required number of specified subjects. The "form," and not the pupil, will be the unit for examination. In order that the certificate shall be accepted for the purpose of matriculation, a mark of credit will be assigned to those candidates who in any specific subject attain a standard which would be appreciably higher than that required for a simple pass. The board hope that the reorganization of the school examinations will facilitate the organization of the conditions of admission to the universities and the professions. In addition to the three main groups of subjects which form a general course, a fourth group, including music, drawing, manual work, and housecraft, may be recognized by indorsement on any certificate awarded to those who are successful in the main examination.

The second examination will be designed for those who have continued their studies for about two years after the stage marked by the first examination. It will be based on the view that the school course should in these two years provide for more concentrated study in three main groups, classics and ancient history, modern humanistic studies, science and mathematics. The candidate will be required to offer one group as a whole and at least one subsidiary subject. Only those schools will be able to take the second examination which have an organized course of about two years beyond the stage marked by the first examination. The two examinations will be accessible to all candidates under 19 years of age, whatever their previous education. It is proposed to bring teachers into touch with the examining bodies, by representation on the examining body, or by some system of consultation by giving them the right to submit their own syllabuses, and by submission to the examining body of an estimate of the relative merits of the candidate in each subject offered for examination.

In view of the number of examining bodies it is proposed that the board of education shall be a coordinating authority to determine minimum and equivalent standards in examinations and fees, and to initiate conferences of the examining bodies. It is explicitly provided, however, that the board of education shall only exercise this authority after report from and with the assistance of an advisory committee composed of a representative of each approved examining body, of local education authorities, and of the teachers' registration council.

A certificate of success in the examinations will not be issued before the candidate attains the age of 16 years. In the case he is of a school on the board's list of secondary schools, the certificate

will not be issued until he has completed a course of three years and until he leaves the school.

The examination is to be submitted from a school found to be efficient on an inspection by the board embracing all its activities. Arrangements are to be made for the closest cooperation between the board's inspectors, both the examining bodies, and the advisory committee.

Circular 849 indicates a distinct movement in the direction of the Scotch education department's methods and its leaving certificate examination. The department inspects the schools, sets and supervises the examinations, and issues certificates under conditions some of which are strongly reflected in Circular 849.

An intermediate certificate is given—

To testify to the conclusion of a well-balanced course of general education, suitable for pupils who leave school at 15 or 16 years of age, or, alternatively, to the fitness for entry on more specialized courses of post-intermediate study of such pupils as remain at school till 17 or 18.¹

The intermediate course must extend over not less than three years. It must be an approved course, as a rule, providing for instruction in at least five subjects, embracing English (including history and geography), a language other than English, mathematics, experimental science, and drawing.

The leaving certificate is awarded on the satisfactory completion of a course, as a rule of not less than two years' duration, of post-intermediate study approved by the department. The curriculum is expected to provide for the continuous study throughout the course of not less than four subjects, one of which must be English on the higher-grade level, together with a subsidiary study of history (not reckoned as a separate subject). The normal general course includes one language other than English, as well as either mathematics or experimental science studied on the higher grade level. The remaining subject or subjects without restriction as to grade may be chosen from a list of electives which include drawing, music, and domestic science.

For both certificates excellence in one branch may be held as compensating for some degree of deficiency in another. No certificate is awarded without full consideration of the opinion of the teachers as to the proficiency of the pupil in his various subjects, and the deliberate judgment of the headmaster as to the candidate's claim for a certificate on the whole range of his work.

The significance of the Scotch education department's leaving certificate examination is rapidly increasing. It is largely supplanting the preliminary examination as a means of entrance to the Scotch

¹ Scotch Education Department, Circ. 840, July 7, 1913.

universities. Of the 902 new applicants accepted by the Carnegie trust for the winter session 1913-14, in their first year of university attendance in the four university centers, 87.6 per cent entered by leaving certificates.¹

The influence of these certificates may be seen in a draft ordinance of the four universities in discussion since 1913. It proposes changes in the regulations as to preliminary examinations. It would substitute for the present joint board of examiners an "entrance board" on a more permanent basis than that of the examiners, and with enlarged powers of control and supervision of the preliminary examinations. An important step toward the coordination of educational authorities and examinations is intimated in proposing that the entrance board—

shall have power to confer from time to time on matters relating to preliminary examinations with the Scotch education department, with bodies representing teachers in Scotland, and with university and other educational authorities outside Scotland.

In the sections with reference to the methods, scope, standards, higher and lower, of the examinations, the subjects and the time of passing, there is close conformity with the department and its leaving certificate. There is an approach to an accredited system of schools which have been inspected by the department.

The proposed Scotch entrance board is a tribute incidentally to the success of the coordinating movement in examinations through the joint matriculation board of the Universities of Manchester, Liverpool, Leeds, and Sheffield.²

The pathfinder is the Oxford and Cambridge schools examination board, commonly called the joint board.³ It was established in 1873 for the inspection and examination of schools preparing boys for those universities and to grant certificates on the results of the examination. Girls' schools are now admitted. The examinations of the board are mainly of two kinds, school examinations, and examinations of candidates for certificates. The certificate examinations are three, for higher certificates, for school certificates, and for lower certificates. The higher certificate examination, started in 1874, is intended for sixth form candidates of about 18.⁴ Every candidate is required to satisfy the examiners in at least four subjects and may not be allowed to offer more than six.

¹ Cf. Ch. II, "Scotch Universities," p. 58.

² Cf. Chs. IV, "The New or Provincial Universities," p. 111; XIII, "Coordination of Institutions," pp. 200-201. The joint matriculation board inspects and examines schools and awards senior school certificates, which are matriculation certificates if the requisite subjects are chosen; also school certificates and housecraft certificates.

³ Cf. Ch. I, "Oxford, Cambridge, and Durham," p. 37.

⁴ In 1915 the number of candidates for higher certificates was 1,713; number certificates awarded, 987.

The school certificate examination is intended for fifth form candidates of about 17. It is a pass examination as a test of general education and is awarded on a minimum of five subjects. The certificate is granted only to candidates who have been in attendance for three years with satisfactory conduct, at one or more schools, inspected at intervals of not more than five years by the joint board, or by the board of education and approved by the joint board. The examination may be held at an uninspected school and its results without a certificate accepted at the universities.

The lower certificate examination is intended for candidates of about 16. Successful candidates are classified in each subject in two classes. The certificate is awarded on a minimum of five subjects. The higher certificate and the school certificate give exemption under certain conditions from responsions at Oxford, the previous examination at Cambridge, and from the entrance examinations at their colleges, from the matriculation examinations at other universities, and from the preliminary examinations of professional bodies, of law, medicine, etc.¹

The board of education recognizes these certificates, with some provisos, as satisfying certain of its requirements for the training of teachers. Indeed, the board and the universities have come into a closer cooperation, in that the board has recognized the universities as inspecting authorities, and the "administrative inspection" of the board may be in conjunction with the "examination inspection" by the universities. This may be a point of departure for one of the reforms adumbrated in circular "849" to effect the combination of a system of inspection with a system of examination. The results of inspection need to be known by the examiners, and the finding of the examiners by the inspectors.²

The local examinations of Oxford and Cambridge, which must be kept quite distinct from the school examinations, of which they were a forerunner, were established in 1858 as a result of an appeal from outside the universities.³ At first these were really *local* examinations, i. e., examinations at local centers, not schools.

They were intended to promote a *good general education* for those under 18 and not members of the universities. The candidates were expected to master the elements of a plain English education, after

¹ Cf. "Regulations of the Oxford and Cambridge schools exam. board," 1915.

² Cf. on the state of inspection "Report Consultative Committee," *supra*, pp. 63-66, 889. The opinion of the schools inquiry committee was in favor of intrusting the examinations of students in secondary schools to universities as the natural centers. Rep. of committees, 1868, Vol. I, p. 648. The secondary education committee report made an "important distinction between official and educational inspection," "official" dealing with buildings, regulations, etc.; "educational" with the examination of pupils. "Inspection should be provided by the State and examinations by the universities." Vol. I, 1895, pp. 162-165.

³ Cf. Ch. I, "Oxford, Cambridge, and Durham," p. 37.

which they were to be allowed a wide latitude in the selection of subjects. The universities were appealed to as competent and impartial and possessing "in a special degree sufficient public confidence for the work." There was fear on the one hand of the perils of bureaucratic methods of a State board, and on the other hand of the "private crochets or personal interests" of other bodies.¹ So successfully have the universities fulfilled their mission that these examinations have multiplied and been subdivided into preliminary, junior, senior, and higher local examinations, taken at many centers and by a multitude of candidates.² The senior and higher local examination under certain conditions gain exemption from "responsions" and the "previous examination." The growth of extra-mural examinations and of inspection of schools by the universities, and all apart from State legislation, has so demonstrated that a university is naturally the apex of a school system that the charters of all the new British universities empower them to inspect schools and be examining bodies.³ In spite of the free and voluntary evolution of the various examination systems and the obvious need for their coordination one hears from adverse critics of Circular "849," in accordance with their fears or interests, phrases not unfamiliar in America—on the one hand, "deliverance from the yoke of the universities," and on the other, "protection from the tyranny of the board of education."

A galaxy of universities is appearing above the horizon, each with its own planetary system of schools, and all, under the influence of a national board of education, moving toward one goal by means of school leaving and entrance examinations with common standards. We may be on the verge of a favorable answer to the plea Lord Curzon made in 1909 "for a universal and elastic system of school-leaving examinations conducted by the universities in consultation with the Government and with the masters of secondary schools." The signs of it are the promulgation of a statute for the reform of responsions at Oxford in 1913, although it was temporarily defeated in 1914, and the report in 1914,⁴ still pending, of the previous examination syndicate at Cambridge in favor of fundamental changes, administrative and educational. In both uni-

¹ Acland, T. D., "Some Account of the Origin and Objects of the new Oxford Examinations for the title of Associate in Arts and for Certificates," 1858; cf. report Consultative Committee, *supra*, pp. 11-14, 160-170.

² Oxford local exams., total number candidates (exclusive certain oversea centers) examined for certificate, 17,884 in 1915, of whom 12,845 passed.

³ Cf. Chs. I, "Oxford, Cambridge, and Durham," p. 20; IV, "New or Provincial Universities," pp. 111-112.

⁴ The Oxford statute promulgated in congregation, Nov. 4, 1913, by a majority of 10, and repeatedly debated and amended in succeeding congregations, was rejected June 16, 1914, by a majority of 37; some of its friends voting against it in its amended form. The Cambridge syndicate appointed May, 1913, reported June, 1914 (Cam. Univ. Rep., June 16, 1914). Further action postponed on account of the war.

versities references were made to conferences designed to procure cooperation and to bring into line the school examinations, which served as a test of general education. In both places a change in the administration of the examinations was proposed in order to have the supervision of these examinations in the hands of those dealing with the inspection and examination of schools. As regards educational changes, the proposal at Oxford was practically to substitute for responsions the examination for school certificates which already exempts from responsions. The statute proposed the addition to the necessary subjects, namely, Latin, Greek, and mathematics, of English, and an optional modern subject, in languages or historical or natural sciences. It is said that the retention of compulsory Greek is the crucial question behind the reform of responsions. The measure would have broadened and raised the standard of responsions. It was received with unanimity and enthusiasm by the headmasters' conference and by the headmasters' association, the representatives of some 800 schools and of 75 per cent of those preparing the undergraduates who come to Oxford. The friends of the rejected statute believe, in view of the possible developments at Cambridge, that the rejection may prove to have been a blessing in disguise. They hope that the two ancient universities will take counsel together to deal with the urgent problem of correlating the universities with the secondary schools and at the same time broaden the avenue to the university for all classes of students.¹

The Cambridge syndicate wish "that the examinations that qualify for study at universities and for entrance to professions should be coordinated." They "think that preliminary examinations should be comprehensive in their scope, but should include only such subjects as are taught in the ordinary curriculum of public and other secondary schools." The syndicate's plan, in harmony with the scheme of the board of education, proposes a previous examination of a scope and standard "such that it can be taken by the average schoolboy of about 17 years of age in the course of his normal school work without cramming or special preparation." They propose that a student shall be required to pass in groups of subjects rather than in individual subjects, and that some choice of additional optional subjects should be permitted. They name as compulsory subjects English, elementary mathematics, and science, and two foreign languages, of which Latin should be one. "The syndicate attach a high value to the study of Greek in the general system of secondary education," but they do not recommend that it should continue to be a compulsory subject. They place on record "that they find that a

¹ Ball, Sidney, "Daily Telegraph," June 30, 1914. Cf. Ch. I, "Oxford, Cambridge, and Durham," p. 23.

majority of teachers do not advocate the retention of Greek as a compulsory subject." Upon inquiry at 200 schools, they learn that at the larger public schools some 25 per cent of the boys are doing Greek, and at the lesser public schools some 8 per cent.¹

The syndicate suggests that any certificate might be accepted in lieu of the previous examination, provided it includes English, mathematics, Latin, and one language other than English and Latin. As Latin is not everywhere a normal subject of study outside the United Kingdom, they do not suggest that Latin should be a compulsory subject for students from abroad.

In conclusion, it is plain that there is a trend away from the old extreme of entrance examinations by individual institutions, if not toward the extreme of an accrediting system common in the United States, toward an intermediate plan like that of the American college entrance examination board. A certificate system is coming in, resting upon something more than an external examination. It must embrace the teachers' estimates of their pupils' abilities, the teachers' participation in the examination, and be supplemented by inspection of the school. The admission examination is being made more flexible, broadened in its range, and its standard raised.

¹ The Society for the Promotion of Hellenic Studies issued a memorial in 1911 on the place of Greek in education. Answers to their questions showed that no university makes Greek compulsory on all students for entrance except Oxford and Cambridge, and they make an exception for students of oriental origin and Oxford for candidates for diplomas and B. Litt. Durham College and Trinity College, Dublin, make Greek compulsory for classical students. No university except Oxford makes Greek compulsory after entrance, and Oxford excepts candidates for diplomas and D. Litt. Only Trinity College, Dublin, makes Latin compulsory. The majority of answers were against beginning Greek at a university. Cf. Ch. I, "Oxford, Cambridge, and Durham," pp. 21-23.

Chapter XVII.

CURRICULA.

A general glance at the curricula of the British universities impresses one with the retention of certain common characteristics and the force of new tendencies. The variety and differences in standards of admission and the general acceptance of a higher and lower grade of preparation are suggestive, as over against the present American standardization with the terminology of "units," after the fashion of an exact science. To understand the British practices and present-day movements, it is necessary to apprehend back of the common inherited forms certain general ideas.

Admission to the university has been determined more by the general development and character of the pupil and his fitness for university education than upon intellectual tests. At Oxford and Cambridge social qualifications have played no small part. Admission at these two universities must come through membership in a college or in a noncollegiate body as the equivalent of a college.¹ Every college and not the university has an entrance examination of different character standards. Each college admits to membership pupils selected on the basis of the certificates or letters of the candidates' masters and the results of confidential inquiries. Candidates who have passed the examinations may be rejected without explanation if these inquiries are not satisfactory.

The result is, firstly, that the university has no voice in determining the conditions of its membership; secondly, that there is a wide variety of standards created by the colleges. A man who is rejected in one college may even pass on and obtain admission at another, the scale of the requirement descending in proportion to the character and reputation of the college.²

It is possible for men to come into residence before they have passed the first real university examination (responsions or preliminary), and to stay on after they have failed to pass. The low standard and limited range of these examinations are not the only grounds for their proposed reform. The practical necessity for a common examination for Rhodes scholars and the exemptions by the acceptance of the examinations of numerous bodies have heightened the feeling that these two universities should not continue to be unique

¹ Cf. Chs. I, "Oxford, Cambridge, Durham," pp. 24-25; XVI, "Examinations," pp. 229-231.

² Curzon, *supra*, p. 109.

in the world in not setting their own entrance examinations and make the passing of them requisite for matriculation.

Hitherto these universities have given an illustration of the subordination of intellectual tests for entrance to what amounted to certificates of character and fitness from the masters in the "public schools," which prepared the majority of their entrants. The six years' training in the elements of a liberal education of the selected pupils in these famous schools perhaps minimized the need for a sifting examination test. The incoming of a large number of students from the newly risen secondary schools, and of women, as well as the example of a matriculation examination in all other universities and the acceptance of a school-leaving certificate, incline the universities to have their own entrance examination of a higher standard and to separate the matriculated from the nonmatriculated student. They feel the constraint of the emergence of a national system of graded schools.¹ The idea is prevailing that a university curriculum should begin where the secondary school leaves off.

The widening of the curricula of both the secondary school and the university by the introduction of new studies necessarily rather telescopes the instruction of the last years of the school with the first year of the university. The former laxity as to matriculation standards has enabled the British to meet this situation. They are now confronting it, dominated by several helpful ideas. The written entrance examination is to be kept subsidiary to the whole record of the student and to personal testimony as to his fitness to proceed to higher education. They seek to accomplish this by the inspection of the schools, by throwing responsibility upon the masters and local authorities in presenting scholars, and, where leaving certificates are not accepted, confining the examination to four branches instead of a multitude of subjects and permitting options in the subjects in one or more of the branches. The beginning of the curriculum in the primary faculties of arts and science up to the time after a year or more when an intermediate examination under various names is taken is treated as a transitional period, during which the personal equation can be calculated. Thereafter a degree of specialization is permitted surprising to an American who has heard so much of the broad cultural education of Oxford and Cambridge. The idea of the Briton is that a liberal education does not consist in sampling all kinds of knowledge, but in liberalizing the mind and producing culture by the human touch, which Principal Shairp defined as "sympathy with intelligence." It is this spirit, the commingling of teachers and students and of the arts and professional

¹ Cf. Ch. I, "Oxford, Cambridge, Durham," p. 29.

studies which prevents the last two or three years of intense specialization turning out narrow men.

Two further factors clarify the whole matter. The "public" and secondary schools are supposed to give the liberal and general education. It will be recalled that the first advocates of local examinations sought to promote "general education," and Oxford at first acknowledged its products as "associates in arts."¹ The "public schools" have been conjoined in liberal education, especially with the primary faculty of arts at Oxford and Cambridge, in preparation for the work of the superior faculties. This is particularly intimated by reference to the history of the "colleges" of Winchester and Eton. The B. A. degree was not a goal, the center and circumference of all culture.* It marked a stage in progress toward a profession. At Cambridge a candidate is not admitted at first to a complete degree, but only to the title of a degree. He is only a "bachelor designate" of arts, of law, of medicine, of surgery, and of music, until later the degree is completed by "inauguration." A bachelor of arts proceeding to the M. A. degree is still an "inceptor in arts." Theoretically a bachelor's degree is preparatory to some professional practice by which it is to be perfected.

The university curriculum opens with a transitional stage presupposing a general and liberal education in the lower schools. Ordinarily within a year, in a second stage, opportunity for specialization is given preparatory to the third and professional stage. We have purposely used the word "stage" instead of "year," for within certain limits one may take his examinations sooner or later when he is ready for them, and take his bachelor's degree in three, four, or more years.

The second factor is the double standard for a degree, the first known as the pass, poll, or ordinary degree, and the second as the honors degree. These are quite different from the American degrees with or without distinction or honor which only record the standing or "marks" of students who have been through the same courses. The British lay out different curricula for the two kinds of degrees and types of students. They minister through a shallower curriculum with a larger number of subjects to the "pass man," the indifferent or average student, and through a deeper and more specialized curriculum to the "honors man," the earnest or able scholar. The pass or ordinary degree "represents a moderate degree of proficiency in a considerable range of subjects, and an honors degree represents a much higher proficiency in a special subject or group of subjects."²

¹ Cf. Ch. XVI, "Examinations," pp. 228-229.

² Cf. Ch. I, "Oxford, Cambridge, and Durham," p. 35.

The pass degree is ordinarily taken in three years and the honors degree in four years. The temptation for the brilliant student in America to shorten his course to three years is prevented by the provision of the separate honors curriculum and higher standard of examination, requiring not less than four undergraduate years or a higher grade of entrance examination. The professed aim of the British university is to provide for the recognition of the quality of work and for men of ability rather than for a carefully measured quantity of work and for the average man.

The standard represented by the ordinary degree is steadily rising and will continue to rise in proportion to the improvement of the general level of education below the university grade. For it is a sound principle that only students who are really worth cultivating should be admitted to share in the privileges of a civic university.¹

The standard has indeed been raised by the statutes of all the new English universities which require that the matriculation examination "must be passed by students before entering on the degree courses in the university." The curricula, too, of all the universities, old and new, have been widened by the introduction of the newer subjects of study.²

But the most suggestive point for the American is the "shattering of the old pint pot," the hard and fast single curriculum of early days, without falling into the anarchy of "free electives," or the multiplicity of optional courses ingeniously devised by the logrolling of departments zealous of maintaining their prestige and attendance. The "honors schools," i. e., examinations conducted not by the professors in each course, but by other examiners, naturally were not examinations for "small, disconnected courses" but for groups of related studies. With the introduction of the new studies, group after group of honors schools budded off the old curriculum. The courses of instruction were divided and organized into subjects, or groups of cognate subjects, to be elected by the more serious students.³ An approximate notion of the drift with reference to curricula may be

¹ Muir, *supra*, p. 81.

² Cf. Chs. I, "Oxford, Cambridge, and Durham," p. 35; II, "Scotch Universities," p. 50; III, "University of London," pp. 75-76.

³ Cf. Corbin, *supra*, p. 283, *passim*. Cf. Oxford public examination divided into a pass school containing five groups of subjects and nine honors schools. The five groups broadly are (1) languages; (2) history, including geography, political economy, a branch of legal study, and English literature; (3) mathematics, including mechanics, elementary physical and biological sciences, and rural economy; (4) elements of religious knowledge; (5) military subjects. A candidate must pass in three of these subjects, of which one must be a language, and not more than two subjects may be taken from any group except the historical group. For the nine honors schools, see Ch. I, p. 35. In honors schools a candidate may offer a special subject in addition to the stated subjects. The written examinations are supplemented by a viva voce examination, or in the case of the sciences by practical work in the laboratories. The successful candidates are enrolled in four classes.

gathered from some of the main points of the revision (1908-09) in the regulations for degrees in arts in the Scotch universities.

The curriculum for the first arts degree must extend over not less than three academical years. Before entering on the curriculum each student must pass an entrance examination in four subjects—English, Latin or Greek, mathematics, and one language or dynamics. In the subjects of Latin, Greek, and mathematics one may pass on a higher or lower standard, but the higher standard is required in at least one of these subjects.

The curriculum for the ordinary degree must consist of either five or six subjects, which must be studied by attendance on qualifying courses therein. The subjects are grouped in four "departments of study": Language and literature; science, including mathematics; mental philosophy, including moral philosophy, political economy and education; and history and law. Among these groups every candidate is required to satisfy the examiners in at least two and not more than three linguistic subjects, in at least one and not more than two scientific subjects, and in logic and psychology, with a proviso that either Latin or mathematics must be taken.

A qualifying course in each subject consists of not less than 75 meetings of the full class on separate days or of not less than 40 meetings where half courses have been sanctioned.

The ordinance empowered each university to define and group the subjects in the several "departments of study," to select them for the curriculum, and to classify them as cognate.

The first degree with honors may be taken in any group (consisting of a subject or subjects) in which honors classes conducted by at least two separate professors or lecturers have been established. Every candidate must attend at least four qualifying courses in his honors group and at least two outside his honors group. The examinations in the subjects in his honors group or groups must be on a higher standard than those for the ordinary degree.

The principles illustrated by the details concerning the first degrees in the faculty of arts are in general applied to the curricula for the degrees in other faculties. In the faculty of science in the preliminary examination, French or German may be substituted for Latin or Greek, and mathematics must be passed on the higher standard. Candidates for the degree of bachelor of science must attend at least seven prescribed courses in not less than three academical years. Three of these courses—mathematics or biology, natural philosophy, and chemistry—are prescribed for the first science examination and may be passed on the ordinary standard. Four courses of higher instruction must be selected from a list of scientific subjects prescribed for a final science examination, at least three of which must be passed on a higher standard.

The latest experiment in framing an arts curriculum has been made at Reading.¹ Its advocates sought to remedy what they asserted to be the defects of the curricula in modern universities. By their scheme the first year of university training "must form a bridge between school and university education. It must share in the characteristics of both." Professors are expected to take a share in the teaching of elementary classes. A one-year course is laid out in five subjects. They are rhetoric (practical training in the use of the mother tongue), Greek or Latin, a second foreign language, either logic or pure mathematics, and the outlines of universal history with auxiliary study of historical geography. A student of foreign languages may substitute a third foreign language for the fourth and fifth subjects. A student of philosophy and mathematics may take both logic and mathematics in place of the second foreign language.

This first year's largely compulsory course is followed by two years of study for the pass or honors degree of B. A. Both courses aim at imparting general culture rather than specialized attainment. The pass degree course is in four branches, one of which must be a classical language and one must be from a nonlinguistic group. In the honors course three subjects are required, of which not more than two may be from the language group. The subjects are not distinguished as main and subsidiary. The degree in honors will be awarded in arts as a whole if work of first-class quality is done in one of the three subjects and a satisfactory standard maintained in the others.

The three honors subjects are studied in correlation as three aspects of humane learning. The plan is based on the assumption that "the honors curriculum (of the universities) seems to stand most in need of reform," and is confirmed by Mr. Stanley Leathe's appeal to the universities for "full and enlightened recognition" of the claims of "modern humanistic studies."²

A proposed third stage of the Reading curriculum is a two years' postgraduate course for the M. A. degree, open to those who have taken the B. A. with honors. The consent also of the faculty is necessary in each case in order to give assurance that the student in the opinion of his teachers is qualified for specialization. One year at least must be spent in residence at the university. The candidate must pursue an approved course of study in a single branch of learning, under the direction of the professor responsible for the subject of his thesis.

¹ University College, Reading. Twenty-first Anniversary, *supra*, 1918, pp. 51-75. Cf. Ch. V, "Independent University Colleges," pp. 132-135.

² The Times, *edu. sup.*, Jan. 7, Feb. 4, 1918.

The degree is to be awarded upon the presentation of a thesis satisfactory to a board of assessors. There is to be no examination except an oral discussion of the subject by the assessors with the candidate. The principle is maintained that specialization in a single subject should be deferred to a postgraduate stage of the curriculum, resting upon "a broad and liberal honors course in the humanities."

The variety and flexibility of the curricula, the attempt to recognize the quality as well as the quantity of the student's work, the elasticity in the time requirements in covering distinct stages rather than years in the curriculum, and the freedom of the student to choose his curriculum, give a preeminence among the methods of instruction to a tutorial system. The tutorial system at Oxford and Cambridge is being made more vigorous than ever. The inter-collegiate lectures, the opening of more permanent careers and of opportunities of promotion, have enabled the tutor largely to supplant the private coach.

The Scotch and the new English universities feel the need of some adaptation of the tutorial system and are making endeavors in the direction of it. Some of them have instituted "advisers of studies," as at Glasgow. Reading assigns every student to a tutor. The tendency everywhere is to supplement the lecture system by paper work, and by some adaptation of the seminar, as well as by laboratories and practice work in the sciences.

The curricula in the professional faculties, from the nature of the case, are largely fixed. They are anchored also by the recognition of their preliminary courses in the arts and science faculties and degrees, and justify within certain limits the combined courses of some American universities. By the provision of more than one degree, and by advanced degrees, the professional courses also give opportunity for the recognition of specialized or advanced work beyond the first degree.

Chapter XVIII.

STUDENT LIFE.

The two distinct types of student life, that of Oxford and Cambridge on the one hand, and that of the Scotch and new English universities on the other, are tending to approximate one another. The collegiate, residential, and tutorial system of the former exalted the college above the university and made "the social relationship the basis of the system of instruction."¹ In the latter the university, undivided by colleges as in Germany and America, made "the course" the point of departure, resulting in the greater cultivation of scholastic than of social ideals. The "universitizing" and indeed democratization of the student life in the old universities is due to many factors. The enlargement of the governmental powers of the universities and of their endowments increasing the number of university professorships and lectureships, the use of university laboratories and libraries, as well as the intercollegiate lectures, are giving a common basis of university instruction and acquaintance over and above those of the college. The day is past when each college provided all the necessary instruction for its members and each was independent of the other socially and in athletics. While each college has the advantage of its own small clubs of all kinds, and of its athletic teams, there are now the greater university clubs for every sort of undergraduate activity. The students have fostered these university societies since the end of the first quarter of the nineteenth century, when the Oxford Union was founded, primarily for debate.² At first it was exclusive in membership. It soon became the intellectual, social, and sporting bond of union of the best university men. Gradually it lost its exclusiveness. In 1902 Mr. Corbin wrote that the glory of the union had departed, and attributed it to a response of the union to the strong democratic impulse which had entered Oxford and caused the union to throw down all barriers, virtually receiving any man to membership. It would be better to say its decline in prominence was relative, largely due to the increase of other student organizations. It has recently recovered its position, aided by the gifts of its friends and the en-

¹ Corbin, *supra*, pp. 85-86. Cf. Ch. I, "Oxford, Cambridge, Durham," pp. 16-18 and p. 248.

² The Union Society, Cambridge, was founded first in 1815. It now has more than 18,000 members, of whom 2,000 are in residence.

largement of its buildings. Political leaders and cabinet ministers are glad to lead its debates on living issues. It and the sister union at Cambridge have become the pattern of student unions throughout the English-speaking world.¹

The preeminence of the social element in education is secured by requiring every undergraduate, with some exceptions, to be a member of a college which selects its membership as much upon personal inquiry and social introduction as upon intellectual tests. The family and the later "public school" house life are perpetuated. The upper and lower classmen, the masters, and some of the tutors, reside within the college buildings, which are secluded by their walls and locked gates protecting their "quads," or courts, and gardens. All dine together in the great hall and have their common rooms for the dons and likewise for the students. Each college in its own chapel continues daily family worship, attendance upon which has been compulsory, at least to the extent of answering roll call. The transition to voluntary attendance is now being made, a number of colleges having abolished compulsion within the last 10 years, though keeping a record of attendance. In addition to the regulations and discipline of each college for its students, there are the university regulations. The student has a duality of social life and of obligations in the college and the university like those of the boy subject to the discipline of his home and the laws of the State.² The key to an understanding of the situation is found in the purpose of the college to build character and to make gentlemen as well as to teach, reinforced by the university's traditional theory that undergraduates are *in statu pupillari*. Many of the mediæval regulations, which included even oaths of secrecy and corporal punishment, have disappeared. But it is still considered desirable to retain restrictions, of which but a few relics survive in American colleges. A few illustrations from Cambridge will serve:³ When a student "matriculates" he signs his name to a promise to observe the statutes and ordinances of the university and to be subject to its authorities. He is required, if not in a college or hostel, to reside in "licensed lodgings," or at least in a place approved by the University's Lodging House Syndicate. The lodging-house keeper signs an agreement which virtually requires him to enforce the residential regulations of the colleges. For example, he agrees to lock the outer doors at 10 o'clock at night and to make a weekly report upon the students' observance of regulations. Noncollegiate students are subject to the same regulations as the members of a college, and are

¹ Cf. p. 247.

² Cf. Ch. I, "Oxford, Cambridge, Durham," pp. 18, 27, 40.

³ Cf. "A Compendium of University Regulations for the Use of Persons in Statu Pupillari." Cambridge University Press, 1913. Cf. Regulations for Women, Ch. VIII, "Women's Colleges," p. 154.

under the supervision of a censor appointed by the Lodging House Syndicate in place of a college tutor.

Under the title of "discipline," the first requirement is to wear—proper academical dress *in decent order and in proper manner* at all university lectures and examinations * * *, in the university church, the senate house, and the library; at all times on Sundays in the streets, and every evening in all parts of the town.

A fine may be imposed for smoking in the streets or riding a bicycle while wearing academical dress, a rule more honored in the breach than in the observance.

A student is forbidden to drive "tandems" or "four-in-hand" carriages. On Sunday he may not drive any vehicle without the written permission of his tutor. He may not keep and use any motor vehicle within the precincts without obtaining, upon the permission of his tutor, a license from the university. He is forbidden to have dealings with any money lenders or to contract large debts without the knowledge of his tutor. Any tradesman to whom any person *in statu pupillari* becomes indebted to an amount exceeding \$25 is required to notify the college tutor, and the tradesman is bound to send to the tutor on each quarter day a statement of the whole amount owing from a pupil. The tradesman violating the rule is liable to be "discommuned," i. e., he is forbidden to deal with any pupil, and all pupils are forbidden to trade with him.

Leave must be obtained to give or take part in public entertainments. Until modern times attendance at a theater was forbidden, and now the university prescribes the parts of the house to which students may be admitted.

A student must present a certificate that he can swim, if he is to use a boat on certain parts of the river.

These specimens give an impression of the minutiae of social regulations, which, it is fair to add, are administered with discretion. They supplement the fundamental regulations of any violation of morality and decorum. In passing it may be said different professors tell me there has been an improvement in morals. They roughly estimate that one-half the students now take water instead of beer or wine as formerly. The university cooperates with the college authorities. In practice, the tutor, to whom a limited number of students is assigned,¹ stands in loco parentis, and the "caution money" deposited by the pupil upon matriculation adds a property restraint to personal sanctions.

Conversations with American Rhodes scholars in Oxford and with teachers who have had experience in both American and English colleges, tend to support the opinion expressed by an American

¹ E. g., at Trinity a tutor is allowed 42 pensioners and 5 sizars.

at Oxford: "On the whole, I would say that the restrictions of college life in England are far less dangerous than the absolute freedom of life in an American college."¹

The multiplicity of colleges and college clubs has not diminished the attention given to athletics. Each college has its series of athletic clubs for boating, cricket, football, lawn tennis, hockey, golf, and field sports. The captains and secretaries of all the clubs call on the freshmen to see what they can do. The collegiate system gives opportunity for the intercollegiate sports and training for the university teams. A college is rated by the number of "firsts" it takes in scholarship and the number of "blues" it takes in the "varsity" games. Even in the obituaries of England's greatest men prominence is given not only to the "firsts" and prizes but also to their athletic honors taken in their undergraduate life.

The score or more of colleges at each of the universities, the zeal of the college athletic clubs, the habitual devotion of the student's afternoon to the playing field, and the Englishman's inbred love of sport, cause the students, practically universally, to engage in athletics. The contrast is great compared with the American university, which produces a few athletic champions out of a limited number of athletes. The English have hundreds of students engaged, but all just below the champion standard. The enthusiasm of the universities as a whole for athletics is modern. Intervarsity meetings were not established until in the last half of the nineteenth century. There is freedom to play with nonuniversity organizations and, to an American, a striking absence of faculty and other regulations. In 1914 the introduction at Oxford of certain restrictions with reference to age for participation in matches was attributed to the presence of Rhodes scholars of riper years. The universal British spirit of the amateur and of sportsmanship safeguard against the intrusion of professionalism and the American overseriousness in playing to win.

Out-of-door games from boyhood have made the spacious playing field, possibly aided by the climate, a substitute for the gymnasium. Compulsory physical training is practically unheard of. This is not only on account of the prevalence of games, but of the spirit of voluntarism which so characterizes the British people that they have raised the greatest volunteer army in the history of wars.

Military training is a recent instance of voluntarism in British schools and universities. It is closely allied with physical training and the social life of undergraduates. In the colleges of agriculture and mechanic arts throughout the United States it has long been compulsory by statute. An agitation to make it so in British

¹ Corbin, *supra*, p. 50.

universities caused a battle of "fly sheets" in Cambridge shortly before the war. Proposals in an article in the *Nineteenth Century and After*¹ advocating making military instruction compulsory by act of Parliament for a B. A. degree in British universities were urged for consideration by the Cambridge senate in a fly sheet signed by over 1,700 members. It was opposed by some 150 resident members, if the university were to act by its own authority. The outbreak of the war has given a pause to the discussion, but has brought into prominence the history and value of the officers' training corps in the schools and universities. After the Boer War the war office took advantage of the interest of the students in military training, particularly in the universities, and provided a system of granting them commissions.²

In 1907 Lord Haldane, then secretary of state for war, arranged that the University Volunteer and School Cadet Corps should become contingents of the new officers' training corps.

The primary object of the officers' training corps is to provide students at school and universities with a standardized measure of elementary training, with a view to their eventually applying for commissions in the special reserve of officers or the territorial force.³

These "university candidates" for commissions, averaging some three years older than the boys from Sandhurst and Woolwich, are granted 18 months' seniority. They have to pass examinations in six subjects—strategy and military history, tactics, military engineering, topography, military law and administration. The movement was so successful that by 1911, 16,000 cadets were present at the royal review of the officers' training corps by the King at Windsor.

In 1912 the University of London recognized for the first time military science as an optional subject in the courses for the B. A. and B. S. degrees.

The officers' training corps have sent thousands of volunteers into the present war and are regarded as a chief source of supply to meet the terrible loss of officers.⁴ Surely the lesson from British experience is not to multiply West Points, but to make more efficient the military departments in American colleges and universities.

A series of "War and Peace Societies" was being established in the universities just before the war, but avowedly not inimical to

¹ No. 445, Mar., 1914, pp. 682, passim, "The Universities and Military Training;" cf. "Schools and Military Training," *The Times*, Ed. Sup., Feb. 1, 1915.

² Cf. Peterson, W. G., "Military Training in the University," *University Magazine*, Apr., 1914, Montreal, pp. 292-305.

³ Regulations for Officers' Training Corps, U. K., pub. with army orders, Apr. 1, 1912.

⁴ The total numbers, approximately, serving in the British forces (reported in the Year-Book of the Universities of the Empire, June, 1915), from the staffs of instruction of the universities and colleges in Great Britain and Ireland, 1,185; from the student bodies, 17,436, inclusive of the officers' training corps; including graduates, it is estimated that Oxford and Cambridge alone have sent about 20,000.

the officers' training corps. The objects of the societies are to diffuse information "with regard to the economic futility of armed aggression, to consider the problem of defense, and means of settling international disputes without war."

A sign of the democratization of Oxford and Cambridge is the life of the present Prince of Wales at Oxford as contrasted with that of his grandfather, King Edward, when Prince of Wales. King Edward was not permitted to enjoy the democratic life of an undergraduate. He did not have undergraduate rooms in Christ Church. He wore a special gown. When he entered the room at a public function, like a debate at the union, everybody rose. The present prince in 1914 closed two happy years of ordinary undergraduate life, coming up like any other "fresher." He had no special privileges; no distinction in treatment, dress, or address was made between him and the other students. He was content to play football with the college second eleven, to become a private in the officers' training corps, and in "eights week" to be simply an earnest follower of the boat from the towpath.

Lord Rosebery has called attention to the change in the treatment of the nobility since his time as an undergraduate, when a nobleman, though a "fresher," was seated at the high table and had precedence over fellows and scholars. At Cambridge the chief vestige of the former distinction of rank is that a nobleman pays a matriculation fee of \$75 as over against a fellow-commoner's \$50.

The war, which has more than "literally decimated" the universities, furnishes an opportunity for, if it will not compel, a new order of things. Already the provost of one of the colleges has issued a plea to the dons to initiate a greater simplicity and economy in living and a greater industry.¹

The university publications estimate the total expenditure of a student within the short collegiate year of about 20 weeks at from \$750 to \$800. It is possible, by the most rigorous economy and by foregoing much that makes university residence of value, to reduce the expenditure to \$425 or \$450. It is evidently desirable and in no way extravagant to spend \$1,000. The Rhodes scholars therefore find the \$1,500, which are supposed to cover all the expenses for a year of 52 weeks, including traveling, none too much.

The call to the simplification of life, to less expensive living, and greater industry in the old universities, and the increased devotion to university activities over and above those of the colleges, are evidences of the approximation of the student life to that of the Scotch and new universities. The latter universities, in turn, seeing the advantages of the former with their collegiate residences and social

¹ Phelps, L. R., provost of Oriel College, Oxford, "Thoughts for the Times." Cf. *The Times*, Educ. Sup., Apr. 6, 1915. Cf. Ch. I, "Oxford, Cambridge, Durham," p. 80.

regulations, are seeking to provide facilities for the corporate student life. Without exception they are now encouraging the erection of halls of residence or hostels. Without exception each one of them has at least one such place, and the number is rapidly increasing through private benefactions. The first building is generally for young women, and then for training college students, in order to receive grants from the board of education. The authorities are attempting to create the atmosphere of an Oxford or Cambridge residential college without its expensiveness. One of the latest examples is the city of Leeds new training college. The site is a 90-acre park in the suburbs, conveniently connected with the city and the university by street railway. The buildings consist of a great central edifice devoted to instruction, flanked by three men's hostels on one side and five women's on the other, with their adjoining playing fields. At the sides and back are houses for the principal and vice principal, laundry, swimming bath, and games pavilion. Each hostel houses 60 students. Each has a common room and dining hall. Each house has a resident tutor who, with his prefects, some of them chosen by the students themselves, maintains the discipline of the place. Each hostel is a financial unit, for which its matron is responsible. In the center of the college building is a large hall, with stage and organ, about which are grouped, with connecting cloisters, the rooms devoted to instruction.

Reading is working out and applying certain principles as to a residential system in a modern university. The education of the student by association with his fellow students is made a factor equal to his study and his class work.¹ The hall of residence is considered the best means for this purpose, but certain conditions are important. The hall should accommodate between 50 and 100 students. If there are less than 50, the right sort of people are not likely to meet one another. If there are over 100, there is danger of some becoming hermits. Hostels should not be occupied by particular classes of students, or exclusively by those entering with the same training, or contemplating the same career. To do so is to miss the opportunity of broadening the students' outlook. The hostel tends to establish a standard in such matters as those of food, clothes, and manners. A standard of plain living so desirable for society in this age becomes a necessity in the new universities, bound to make the higher education more accessible and less expensive. Even so, the hostel may be more expensive than living at home or in lodgings. The additional cost is justifiable in the course of a modern education, just as the more costly laboratory method of

¹ Cf. Ure, P. N., "A Residential University," University College, Reading, Twenty-first anniversary, 1918, pp. 26-37.

instruction is worth more than textbook teaching. Each hall is in charge of a warden, as a rule a member of the teaching staff, who is responsible for discipline and management. The relationship between students and staff are furthered by the residence of some of the teachers, besides the warden, who are not concerned with the government of the hall. A point is made of having a spacious site and garden for each hall, and that they shall be accessible to the college.

The cost of board and lodging in these hostels for the academic year of 30 weeks ranges from \$160 to \$250. The college fees are \$100.¹ The total cost for each academic year to the student runs from \$325 to \$425, which is the approximate cost at the Scotch and new universities.

The Scotch and new universities somewhat recently have developed a system of approved lodgings. Most of them require registered students not living with relatives or friends or in a hall of residence to reside in these lodgings, concerning which the university has satisfied itself as to the sanitary and other conditions. Ordinarily a member of the staff acts as supervisor of lodgings. In addition to the residential facilities, these universities have arrived at other arrangements for promoting corporate life which are almost identical in all of them.

The first of these arrangements is the Students' Representative Council, which has spread from Scotland, where it originated in 1884 at the tercentenary of Edinburgh University.² The consciousness of student membership and activity in a university had been kept more alive in Scottish than in other universities by the continuance of the election of a rector by them. This first council was organized to aid in the celebration of the tercentenary of the university and incidentally to keep within limits the usual student demonstrations in university ceremonials. The other Scotch universities formed councils and the four secured official status from the university commissioners of 1889. The concerted action of the councils led to the annual Scottish interuniversities conference, followed under an impulse from Manchester, since 1903 by the annual British students' congress.

The regulations to make the students' representative council thoroughly representative of every section of the student body vary in different universities. Glasgow may be taken as an example. At first the students in each faculty elected the same number of representatives and, in addition, the various university societies were

¹ The total fees for the whole course for the B. A. average at the six new universities, \$295; for the B. Sc., \$350; for B. Eng., \$506; for B. Med., \$710; Scotch universities about the same; Cambridge, for B. A., \$465; for M. B., \$685.

² Cf. Ch. IX, "Organisation and Administration of Universities," p. 159.

directly represented. Experience soon taught that the efficiency of the council was increased by disfranchising the societies and by giving a larger number of representatives to the upper-class men. At present the representatives are elected by the men and women separately and apportioned among the faculties roughly, according to the number of students in them. In addition, there are representatives at large, eight men and four women, elected by the general body of men and of women, respectively. The editor of the university magazine is an *ex officio* member. The total number of representatives is 71. The size of the council makes it necessary to carry on its work by committees. Besides the standing committees of the council, there is a grand committee for and from each faculty.

The functions of the council are in all the universities—

to afford a recognized means of communication between the students and the university authorities; to represent the students in such matters as affect their interests; to promote academic and social unity among the students.

An ordinance of the universities (Scotland) act of 1889 gave the council the right to petition "the *senatus academicus* with regard to any matter affecting the teaching and discipline of the university," also, to petition the university court with regard to any other matter affecting the students. The success of the councils has assured their permanence and establishment widely in the university world. The Scotch rectors confer with the councils before they appoint their assessors in the university court. Major changes in the curriculum even have been due to the representations of councils.

Ordinarily one of the first fruits of a students' council has been the formation of "a students' union," everywhere found to be a most efficient means of promoting corporate life.¹ Commodious and expensive buildings, erected by funds raised by graduates and students, are now to be found in practically all these universities. They provide facilities for reading, writing, dining, games, and accommodation for numerous college societies who desire to make the buildings their headquarters. Commonly, membership of the union is open to present and former students, to graduates, and to the authorities and staffs of the institution, upon the payment of annual or life subscriptions. As a rule a union is managed by present and former students by means of a committee of management. There are separate students' unions for women. In many cases subscription to the university union is compulsory on students and carries with it membership of the various athletic clubs. Sometimes the union has also the management of the athletic grounds and sports, as well as of the social entertainments.

Students' societies and clubs of every kind abound. While the organization of them requires the permission of the university au-

¹Cf. pp. 239-240.

thorities, this is given with the greatest freedom. Opportunity is given for propaganda of every kind.

Thus the corporate life is diversified, made tolerant, and kept keen intellectually. The great movements of the day seek a university connection, which keeps the universities in contact with the social movements of the world and prepares the way for a university leadership of them. An instance is the Christian Union. There are some 150 of these unions in all the universities and almost all the colleges of Great Britain and Ireland. They are affiliated to the student Christian movement, which is in turn one of the 15 national movements which together form the World's Student Christian Federation, with a membership of 150,000 present students.

The total absence of college Greek-letter fraternities is not due to opposition to them, but probably in no small part to the existence of hostels and approved lodgings and in the older universities of the separate colleges with their social features. The numerous ephemeral clubs, as well as the permanent ones, largely supply the place of the fraternities.

Arrangements for giving advice to students have been multiplied. Within six or seven years at Cambridge "supervisors of studies" or "directors of studies"¹ have been appointed by the masters and fellows of colleges. A supervisor, say in natural science or in history, takes men for an hour a week for informal and private advice. Glasgow has appointed "official advisers of studies." In Liverpool the dean of each faculty in his function as an adviser of students is supplemented by departmental tutors. The arrangement is a voluntary one on the part of both tutor and student. At Leeds each student is advised by the head of the department in which he proposes to work. In all the universities efforts are being made to increase the personal contact of the teacher with the student in all his interests.

The spirit of the old and now of the new British universities to educate the student by the corporate life no less than by the intellectual life, which was conserved to a certain degree in the older American colleges, but almost lost in the newer institutions through the influence of the German university, has been revived in America, notably by the examples of Princeton and Chicago.

¹ Cf. Ch. X, "University Officers," pp. 174-175.

Chapter XIX.

UNIVERSITY EXTENSION TEACHING.

University extension in the sense of the universities carrying higher education to adults has had an unparalleled success in England. The progress of the movement has been remarkable. Instituted by the University of Cambridge in 1873, adopted by Oxford in 1878, with the work of the London Society for the Extension of University Teaching, which was founded in 1876, taken over by the reconstituted University of London in 1900, these three universities are the world-wide acknowledged leaders of the movement.¹ Taking Oxford alone, some half million persons have attended the courses given in nearly 40,000 lectures by over 200 lecturers. Nearly 30,000 students have been examined.

The original form of university extension teaching has not declined in England as it has in the United States. The characteristic features of the lecture system at local centers, with a class following the lecture, the setting of paper work and a final examination, have been maintained. This is due in part to the evolution of a series of certificates.² Honors also are awarded and university privileges granted in rare cases, like exemption from the entrance examination and the reduction by one year of the period of residence for the degree of bachelor of arts.

No small secret of the flourishing of university extension lectures has been the arousing of local interests and the organization of permanent local centers. Not only was a local university extension society organized, consisting of annual subscribers, entitled to lecture tickets, but also a local students' association. The objects of the association have been to assist students to carry on the work of the lectures by means of meetings and of a students' library, and to promote the social side of the work.

¹ Cf. Cha. I, "Oxford, Cambridge, Durham," pp. 20, 37; III, "University of London," p. 72; IV, "The New or Provincial Universities," pp. 104-106, 107, 108.

² Terminal certificate after examination on a course of 10 or 12 lectures; sessional certificate on a course of 24; sessional certificate in honors; affiliation certificate (or higher certificate of systematic study) for a sequence of 96 lectures plus examinations; vice chancellor's certificate and affiliation certificate plus examination in elementary mathematics and two languages.

An important step has been the recognition by the university of a university extension center as an affiliated center. By the scheme of affiliation, courses of instruction in sequence are provided, extending over a period of three years, and including not less than 96 lectures and classes. These courses afford opportunities not only for general culture for adults but also for preparation of students intending to proceed to the university. An "affiliation certificate" with its privileges at the university may be obtained. At this point we observe a development of university extension by which it became the parent of municipal colleges, some of which have become the great provincial or new universities. The humbler widely scattered municipal colleges, in addition to being "affiliated centers," are schools of science, technology, commerce, and domestic science, with day departments. They prepare for the intermediate examination of the University of London in arts, science, engineering, and for preliminary scientific medical examinations, as well as for civil service examinations. They come near fulfilling the early dream of university extension in the time of the Commonwealth by William Dell, master of Gonville and Caius College, Cambridge, who urged the establishment of universities or colleges in every great town, and that "it may be so ordered that the youth may spend some part of the day in learning or study and the other part of the day in some lawful calling."

The real secret of the success of university extension was found when the movement not only went outside the university, but returned to carry on its work within the university. The university spirit in the instruction is maintained among the widely scattered affiliated centers and colleges, not only by the sending out of university teachers, but also by gathering in a goodly number of the students from the centers at the "summer meetings" in the universities themselves. These summer meetings have become an integral part of the extension system. The meeting of 1915 at Oxford, the nineteenth of the annual meetings, held generally alternately at Oxford and Cambridge, though owing to the war not enrolling the usual 1,000 students, was full of enthusiasm and gave proof of the vitality of the movement. The subject of study, "The Genius of Ancient Greece and its Influence on the Modern World," chosen long before the war, was treated profitably, with its reflections of present-day problems as regards peace and war, the individual and the State, and the production and distribution of wealth. Despite the war the summer meetings at other universities were not omitted. In the summer meetings no attempt is made to open all departments of instruction. Different fields are selected in different years. This

makes intensive study possible, and avoids to a certain degree the superficiality often attributed superciliously to extension work.

The next stage in university extension was marked by the founding of Ruskin College at Oxford, followed by an agitation to establish a workingman's college, incorporated in the university. These were first fruits of the desire to gather the most promising university extension students within the fold of the university, and of a notion, implicit in university extension from the days of Mark Pattison, that the university should admit to its benefits "a class which has hitherto been excluded by social position or income." A sympathetic atmosphere at Oxford welcomed Ruskin Hall, now Ruskin College, an institution still not officially attached to the university. The opening of the college was trebly significant. Prof. York Powell, a representative of the group of reformers within the university, presided.¹ Representatives of some 300,000 workpeople were present, indicating the event as one of "the most remarkable efforts of the British labor movement." The date, the anniversary of the birth of George Washington, in 1889, was chosen by the founder, Mr. Walter Vrooman, an American citizen, that the college might have the same birthday as Washington in order to perpetuate one of its ideals, that it should be a link between Britain and America.

This was the first *residential* institution in Great Britain for the education of adult working-class students, who were to use the knowledge they acquired there "in order to raise and not to rise out of" the class to which they belong.² The college has flourished since 1910, when, in reaction against an unacademic use of the college for a special propaganda, the present principal was appointed, and the government placed in the control of a council elected by labor organizations advised by a consultative committee of educational experience. In 1913, on the birthday of the college, the first wing of new buildings planned to accommodate 100 students was opened.³ Up to that time some 500 students had passed through the college, and over 9,000 students had taken correspondence courses. Within the three preceding years, 28 Ruskin students had taken the examination for the Oxford diploma in economics and political science, of whom 26 were successful and 16 obtained distinction. In 1914 arrangements were made for the reception of the first woman student at the college.

¹ Cf. Ch. I, "Oxford, Cambridge, Durham," p. 23.

² Bd. of Educ. Rep. of an Inspection of Ruskin College, Apr. 21-26, 1913.

³ Ruskin College, Oxford, Opening of New Building and Unveiling of the Buxton Memorial, Feb. 22, 1913, Report of the Proceedings.

Though temporarily closed in 1915 on account of the war, one may look forward with confidence to its future; for, in the words of the inspectors:

The success of the college as an educational experiment may be regarded as established. When it was founded, it might not have been regarded as possible that workmen taken straight from industrial occupations should be able, after a brief and belated apprenticeship to learning, to enter successfully for university examinations. Ruskin College has thrown new light on the educational possibilities of industrial society.¹

In view of the limited scope of Ruskin College and the report² of the working-class education committee that university extension failed to satisfy the needs of the industrial classes on account of the necessity that it should be self-supporting, Lord Curzon committed himself in 1909 to the advocacy of founding a university workingmen's college. His idea was that it should be a poor men's college, in which the sons not only of artisans but of tradesmen, of farmers, and of small professional men should commingle. The bond of union would be humble means. He asserts:

A worse disaster could hardly befall English education than that the new universities should become the exclusive resort of the poor and unpolished man and that Oxford and Cambridge should be reserved for the rich and cultured.³

Members of the proposed college were to be matriculated and to have the enjoyment of all university privileges. To meet their financial necessities they would not be expected to take a three years' course leading to a degree, but to take a diploma at the end of two years. A candidate would be at liberty to remain and proceed to a degree. The college would remain in session throughout the vacation, and the total cost would, if possible, be not more than \$300 per annum.⁴ A large number of maintenance scholarships were to be attached to the college, which Lord Curzon would appeal to the richer colleges to contribute. He also sought an outside benefactor to build and endow such a college. No response has been made to the appeals, and the entire scheme has found little favor in any quarter and may be considered dead. Doubtless the war, with its resultant retrenchments in all the colleges and readjustment of the "classes" in England, will bury it.

The workers' educational association represents a movement for years flowing side by side with university extension and at length,

¹ Report of an Inspection, *supra*, p. 18.

² Report of a Joint Committee of University and Working-Class Representatives on the Education of Work-People, Oxford, 1908; cf. p. 258.

³ Lord Curzon, *supra*, p. 67. Cf. Ch. I, "Oxford, Cambridge, Durham," p. 21.

⁴ At Ruskin College the collegiate year is 44 weeks and the cost \$260.

in 1907-8, joining it in forming tutorial classes, which has given the latest and most promising development of university extension. After the industrial revolution in the nineteenth century had "flung working men and women into hastily constructed towns" the thoughtful workers of England utilized adult schools, mechanic's institutes, workingmen's colleges, and the university-extension lectures.¹

In 1903, through the efforts of a group consisting entirely of trade-unionists and cooperators, seconded by scholars, a national conference was held at Oxford. "An association to promote the higher education of workingmen, primarily by the extension of university teaching," was formed. Mention was also made of the development of a school-continuation system. The association announced its hopes—

to coordinate existing and to devise fresh means by which working people of all degrees may be raised educationally, plane by plane, until they are able to take advantage of the facilities which are and may be provided by the universities. It is a missionary organization working in cooperation with education authorities and working-class organizations. It is definitely nonsectarian and nonpolitical.

The association spread rapidly by means of conferences and the organization of "local associations."

In 1907, after a second national conference at Oxford, the workers' educational association got its present name. A discussion of "what Oxford can do for workpeople" led to a clearer conception of the work of the association and ultimately to the important report of a "joint committee of university and working-class representatives on the education of workpeople."²

At the same time the first experiments on the lines of tutorial classes, as they are now known, were tried with complete success, at Battersea from the University of London and at Rochdale from the University of Oxford. These classes, with which every university and every university college in England and Wales is now associated, in 1914 numbered 153 and contained about 3,500 working men and women pledged to a three years' course of serious study and the writing of 12 essays in connection with each year of the course. The classes meet once a week, for at least two hours, for 24 weeks in each year, half of the time being devoted to class work. The number in a class is limited to 32, and they must be adults. Among the conditions for receiving a possible grant of \$150 for each year of the

¹ Mansbridge, Albert. "University Tutorial Classes, a study in the development of higher education among working men and women," Longmans, Green, & Co., 1913 Cf. Ch. I, "Oxford, Cambridge, Durham," p. 20.

² Cf. p. 252.

course the board of education requires representatives of a university or university college upon the body supervising the class, which body must be responsible for the framing of a syllabus and the selection of a tutor. The instruction must aim at reaching, within the limits of the subject covered, the standard of university work in honors.

Diplomas and degrees are not asked for, and much is made of the spirit of comradeship in the classes. The practice is growing of holding week-end meetings and summer schools at the universities to which the members of the tutorial classes resort for periods from two to eight weeks. The financial support accorded to tutorial classes since their establishment, and to summer schools in connection with them, amounts to \$187,700.¹ The tutorial classes have been aided not only by traveling libraries loaned by the universities, but also by the formation of a students' central library.

The university tutorial classes have stood the test of the war, though diminished by enlistments. Subjects cognate to the war or arising out of it, judiciously studied, have cultivated the "historic sense and steadied men in the midst of this unprecedented cataclysm." The numerous educational classes and reading circles organized by the Workers' Educational Association, entirely apart from the university tutorial classes, show the permeation of the association by the original missionary spirit of university extension. Classes and lectures have been held in rural districts, and the ideal presented that every village should have its branch of the Workers' Educational Association. Special classes for women have been multiplied, especially in literature, modern history, and child study. Under the impetus of the war, first aid and home nursing have been taken up to reach a fresh type of student.

The association has followed the soldiers into their camps with lectures and even with instruction in French. They have instituted a war-time comradeship committee. Its duty is to organize the supply of letters and magazines to those at the front; to bring soldiers' wives together for educational purposes; to supply talks in convalescent homes. The marvelous growth of the association, its maintenance in the crisis of war, and its success in the federation of labor and learning, mark it as a phenomenal sign of the times.²

¹ From universities, \$87,200; from the State, \$60,000; local education authorities, \$30,500; sundry, \$10,000.

² In 1915, in Great Britain and Ireland, the association has 173 branches, 2,409 affiliated societies, 11,083 members, and 9 daughter associations in the over-seas dominions. The affiliated societies include 902 trade-unions, trade councils, and branches, 383 co-operative committees, 341 adult schools, brotherhoods, etc., 16 university bodies, 21 local education authorities, 178 working men's clubs and institutes, etc., 61 teachers' associations, 148 educational and literary societies, 59 classes and study circles, and 300 various societies, mainly of workpeople. (The Workers' Educational Association. Twelfth An. Rept. 1915.) Cf. Rept. of the Univ. of London Joint Com. for the Promotion of the Higher Educ. of Working People, 1909-1913, Feb., 1914. Cf. Education and the Working-Class (Reprint from "The Round Table," Mar., 1914).

The association has added an extension to university extension which has more thoroughly democratized the latter, and is linking up a system of national education around the universities. The war has emphasized the fact that it is a national movement and has introduced a new phase in adult education. University extension followed popular technical education with cultural studies. In turn attention has been given to the social sciences in the period of social reform in England since the opening of the century. The war has brought home to the mass of the people their ignorance of international affairs. The workers' educational association and university extension have been quick to seize this opportunity to meet the demand for instruction in modern history and international politics.

An impetus and a timely help in the higher ranges of their work will be given by the newly formed "Council for the Study of International Relations," of which Viscount Bryce is president, and the chairman of the Yorkshire district of the workers' educational association has been chosen secretary. The present crisis and the present stage of extra mural university activities give new force to the words of Bishop Gore at the Oxford conference in 1907, when he quoted the remark, "The great function of the universities is to educate the governing classes." He added, "Everybody who has eyes to see must recognize that the governing classes in England and in other countries include, and that continually in a broader and intenser form, those who work with their hands." Mr. Mansbridge prophesies, "The universities can never be the same again. Plato's contention that students should proceed to higher study after experience of life is abundantly reenforced by the practice of tutorial classes."¹

The importance of university extension and an indication that the spirit of it possesses all classes appear in an organization, the Cavendish Association, correlative among the "upper classes" to the workers' educational association. One of the outcomes of the celebrations of the coronation of King George was the formation of the Cavendish Club, promoted by the Duke of Devonshire, whose family name it took. It is a London social club of some 1,400 public-school and university men whose main objects are to encourage its members to devote their leisure time to some form of social service and to bear witness to the Christian spirit as its motive force. In 1913 it was proposed to found a Cavendish Association along similar lines.

¹ Mansbridge, *supra*, p. 125

An appeal was made to public-school and university men by means of meetings throughout the country to form, at important centers, branches of the association to impress upon the men their responsibilities as citizens in the matter of national, civic, and social service. A suggestive list of opportunities for social service was circulated, leaving every man without excuse for not finding in his own locality that special piece of work for which he might be adapted. Planted just before the war, this association has not had time to take deep root, but it exists in suspended animation. The association is but one of many similar enterprises, like college settlements, which reflect a sense of a national need of what Arnold Toynbee called a "citizen education."

University extension is coming to the larger meaning that an obligation is laid upon the university graduate, as well as upon the university teacher, to supply the community with some form of intelligent social service. There is a steady approximation toward Mark Pattison's dream that "the ideal of a national university is that it should be coextensive with the Nation; it should be the common source of the higher (or secondary) instruction for the community." To-day the demand of the workingmen, which can but perpetuate university extension and which is full of hope for democracy, is for something more than "bread-and-butter" education. It is a call for a liberal or humane education which is not so much "a means of livelihood as a means of life." The earlier day has passed when Principal Dale truly said, "The working classes were not ready for what the universities had to give, and the universities did not know what the working classes wanted."

The great war has revealed that the United States has many of the problems of England. University extension may aid in solving some of them. Many American institutions transplanted it in its original form, and some have developed it in very practical ways, but in others interest in it has declined. May it not be well to come again to the English fountainhead? Fortunate as Americans esteem themselves in the absence of social classes, and in the accessibility and inexpensiveness of collegiate education, may there not be searchings of heart, if a due proportion of the children of laboring people are in the colleges, and if the colleges are disseminating the spirit of humane education in their university extension operations? Are the graduates, individually and collectively, spreading the university spirit in social service or tending to become an aristocracy of learning? Are they in their college associations, fraternities, and clubs planning for more than their own social enjoyment? Are they recognizing their obligations to serve the public in church and state? The

American workingman has had faith in his schools and has trusted especially the colleges and universities. Has not the time come for the labor organizations to strengthen their membership and particularly their leadership by courses of study conducted in connection with these institutions with the impartial spirit of truth believed to be preserved in them? May not these organizations assure the perpetuation of the federation of labor and of higher learning in America?

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- ¹ Curzon, "University Reform," p. 142.
- ² From Oxford Univ. Gazette, Feb. 4, 1914, "Returns from the Board of Finance for 1913."
- ³ Including examinations.
- ⁴ During the 1912-1913 Trustees Oxford University Endowment Fund report, £128, 144 (Oxford Mag., Oct., 1913).
- ⁵ Statutory, £38, 511; voluntary, £6, 066.
- ⁶ Including estates, university press, income, taxes repaid, and miscellaneous, excluding examinations.
- ⁷ Including debit balance on general fund, £975, and on common university fund, £178.
- ⁸ In 1913-14.
- ⁹ Including M. A., 407, in 1913-14.
- ¹⁰ Colls. assessed 24 per cent (1913, 114 per cent), Tillyard, p. 273-4. (Chest, £23,785; common university fund, £4,610).
- ¹¹ Including M. A. 351, in 1913-14.
- ¹² For year 1912; see "Yearbook of the Universities, 1914."
- ¹³ Statutory.
- ¹⁴ Cambridge University Reporter, Mar. 23, 1914. Approx. from Bd. of Edu.; Commrs. for buildings, etc., through Bd. of Agri., and balance from Paymaster General (Solar Physics Obs. Acc. Including additional college payments Prof. fellowships, £8, 479. (Chest, £53,401; common university fund, £29,000.)
- ¹⁵ Including additional college payments Prof. fellowships, £8, 479. (Chest, £53,401; common university fund, £29,000.)
- ¹⁶ Chest, £50,823; common university fund, £22,804.
- ¹⁷ Accounts for 1903 on different basis—no just comparison.
- ¹⁸ Including fees.
- ¹⁹ Including balance of external income.
- ²⁰ 46, including clinical.
- ²¹ Examination of bacteriological and pathological specimens.
- ²² 54, including clinical.
- ²³ Day.
- ²⁴ Evening.

Physics Obs. Acc. Including additional college payments Prof. fellowships, £8, 479. (Chest, £53,401; common university fund, £29,000.)

TABLE 2.—*Scottish universities—Staff and students, 1912-13. (See Ch. II.)*

Universities.	Total number of teaching staff.		Number of students.		Total number of students.		Arts.		Pure science.		Applied science.		Tech- nology.		Agri- culture.		Theol- ogy.		Law.		Medi- cine.		Phar- macy.		Teach- ing.		Musio.		Fine arts.		Post- grad- uate.	
	In 1913.	In 1903.	Full time.	In 1913.	In 1903.	In 1913.	Full time.		Full time.		Full time.		Full time.		Full time.		Full time.		Full time.		Full time.		Full time.		Full time.		Full time.		Full time.		Full time.	
							Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.	Part time.
St. Andrews.....	75	118	1,433	1,88	477	1,496	203	.....	96	.....	.....	.....	.....	.....	.....	.....	21	.....	.....	.....	91	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
University College, Dundee.....	47	61	179	36	209	215	1,67	.....	21	.....	14	.....	.....	.....	.....	.....	0	.....	20	.....	73	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Glasgow.....	113	178	.....	2,219	2,835	1,231	.....	.....	492	.....	.....	.....	.....	.....	.....	.....	57	.....	204	.....	749	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Aberdeen.....	68	90	1,043	220	1,163	1,263	.....	.....	53	.....	0	.....	.....	.....	.....	.....	26	.....	16	.....	275	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Edinburgh.....	112	223	2,284	682	956	3,352	1,224	17	425	9	.....	.....	.....	.....	.....	.....	52	1	266	101	288	31	.....	.....	.....	.....	19	.....	.....	.....	.....	.....

¹ Including University College of Dundee; matriculated students only.

² Including 3 in arts and science.

³ Including 1 in science and medicine and 6 in public health.

⁴ Including 75 in summer sessions.

⁵ Including teaching.

⁶ Including applied science, technology, and agriculture.

⁷ Including with single class enrolment.

TABLE 3.—*Scotch universities—Financial statement, 1903-1913. (See Ch. II.)*

Universities.	Years.	Fees.	Endowments (income).	Donations.	Carnegie trust.	Local grants.	Parliamentary and treasury grants.	Examinations and other sources.	Total income.	Total expenditures.	Total value of grounds, buildings, and equipment.
St. Andrews.	1903	£6,250	£3,523	£1,260	£2,084		£16,306	(*)	£23,119	£24,414	
	1913			16,755					11,612	10,929	
University College, Dundee.	1903			262	(*)		3,370	£488	14,014	13,966	£146,000
	1913	1,871	7,996	379					76,837	77,023	
Glasgow.	1903	34,609	29,170	30,400	2,000	£450	88,880	10,106	109,965	107,600	
	1913			29,800					119,529	117,868	
Aberdeen.	1903	4,285	792	1,020	2,917		28,400	6,282	33,769	31,263	
	1913	33,260	12,269	1,000		10,800	15,070	6,601	85,659	79,634	(*)
Edinburgh.	1903	86,327	16,967	11,800	3,798	10,800	26,142	10,317	109,233	109,316	
	1913										
Totals.		86,842	58,468	44,272	10,799	11,250	101,593	26,188	300,080	296,588	

* 1911-12. * Four years' lectureship in sociology.

* Included in column of fees.

* General fund.

* No official estimates have been made.

TABLE 4.—*University of London—Staff and students. (See Ch. III.)*

Institutions.	Total number of teaching staff.		Number of students.		Total number of students.		Arts.	Pure science.		Applied science.		Tech- nology.	Agri- culture.		Theol- ogy.	Law.		Medi- cine.		Dent- istry.	Phar- macy.	Teach- ing.		Music.		Fine arts.		Post- gradu- ate.				
	In 1903.	In 1913.	Full time.	Part time.	In 1903.	In 1913.		Full time.	Part time.	Full time.	Part time.		Full time.	Part time.		Full time.	Part time.	Full time.	Part time.			Full time.	Part time.	Full time.	Part time.	Full time.	Part time.		Full time.	Part time.	Full time.	Part time.
University College.	95	135	875	1,208	673	169	154	115	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
King's College for men.....	99	130	504	2,793	741	80	130	87	54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
King's College for Women.....					88																											

¹ Including day and evening.

² Including 1,918 King's College School and C. S. students and 1,210 Gilbert lectures.

³ 100 attending course of 4 Gilbert lectures.

⁴ See Tables 13 and 14.

University of London, including all institutions, in 1913-14: Total number of staff, 874; appointed teachers, 99; recognized teachers, 775; total number of candidates for all examinations, 11,920; internal students, 4,888; postgraduate and research students, 450.

TABLE 5.—*University of London—Financial statement. (See Ch. III.)*

Institutions.	Years.	Fees.	Endowments (income).	Donations.	Local grants.	Parliamentary grants.	Examinations and other sources.	Total income.	Total expenditures.	Total value of grounds, buildings, and equipment.
University of London.....	{ 1903 1913 }	£43,102	£848		£5,066	£8,000	1 £15,116	£46,474	£44,270	£253,596
University College.....	{ 1903 1913 }	26,266	9,053	£717	6,465	19,208	2,680	72,132	69,504	34,346
King's College for Men.....	{ 1903 1913 }	15,118	795	3,019	900			33,437	34,346	640,000
King's College for Women ¹	{ 1903 1913 }			1,445	4,285	15,258	2,079	66,694	66,867	216,500
Total.....	1913	84,486	10,696	4,464	15,816	42,466	19,875	177,808	175,960	1,410,096

¹ Excluding examination fees. ² Excluding grounds. ³ Grounds are Crown lands. ⁴ See Tables 13 and 14.

TABLE 6.—*University of London Institutions for Instruction and Research, 1913-14. (See Ch. III.)*

[The first figures after the names indicate the number of "Appointed and recognised teachers" or in group (c) of institutions of "Recognized"; the second figures the number of "internal students." The letters indicate the faculties in which courses may be taken by "internal students," as: A., arts; T., theology; L., laws; M., medicine; Mu., music; S., science; E., engineering; Ec., economics.]

(a)

Colleges Incorporated in the University.

University College—87; 694; A., L., M., S., E., Ec.

King's College—64; 461; A., L., M., S., E.

King's College for Women—18; 57; A., S.

Other Institutions Belonging to the University.

Goldsmiths' College. (See group (c).)

Brown Animal Sanatory Institution—0; 0.

Physiological Laboratory—3; 1; S.

Francis Galton Laboratory for National Eugenics—0; 0.

(b)

Schools of the University.

Imperial College of Science and Technology—40; 341; S., E.

Royal Holloway College—17; 148; A., S.

Bedford College for Women—26; 292; A., M., S.

East London College—25; 407; A., S., E.

London School of Economics—25; 316; A., L., S., E.

South-Eastern Agricultural College, Wye—4; 21; S.

Westfield College—10; 58; A., S.

London Day Training College—4; 37; A.

New College, Hampstead—5; 35; T.

Hackney College, Hampstead—6; 14; T.

Regent's Park College—3; 10; T.

King's College, Theological Department—10; 40; T.

Wesleyan College, Richmond—3; 2; T.

St. John's Hall, Highbury; 4; 10; T.

St. Bartholomew's Hospital Medical School—38; 211; M., S.

St. Thomas's Hospital Medical School—35; 94; M.

Westminster Hospital Medical School—23; 13; M.

Guy's Hospital Medical School—35; 180; M., S.

St. George's Hospital Medical School—25; 1; M.

London Hospital Medical College—42; 151; M., S.

Middlesex Hospital Medical School—28; 60; M.

Charing Cross Hospital Medical School—18; 4; M.

London School of Medicine for Women (Royal Free Hospital)—21; 149; M., S.

University College Hospital Medical School—24; 72; M.

King's College Hospital Medical School—26; 8; M.

St. Mary's Hospital Medical School—31; 69; M., S.

London School of Tropical Medicine—10; 0.

Lister Institute of Preventive Medicine—7; 8; S.

Royal Army Medical College—0; 0 (others average 70).

Royal Dental Hospital and London School of Dental Surgery—4; 0.

Naval Medical School of the Royal Naval College, Greenwich—0; 0 (others average 80).

(c)

Institutions Having Recognized Teachers.

University of London, Goldsmiths' College—15; 73; A., S.

Battersea Polytechnic—18; 109; A., S.

Birkbeck College—32; 359; A., M., S., Ec.

City of London College—4; 0 (other students, 2,261).

Finsbury Technical College—2; 0 (other students, 177).

Jews' College—4; 15; A.

Northampton Polytechnic Institute—10; 14; E.

Northern Polytechnic Institute—10; 65; A., S., E.

Royal Veterinary College—6; 14; S.
 Sir John Cass Technical Institute—6; 18; S.
 South-Western Polytechnic Institute—16; 115; A., S., E.
 West Ham Municipal Technical Institute—11; 66; A., S., E.
 Woolwich Polytechnic—7; 9; S., E.
 Maria Grey Training College—4; 23; A.
 St. Mary's College, Paddington—3; 14; A.
 Mary Datchelor Training College—3; 7; A.
 Borough Road College, Isleworth—1; 0 (other students, 140).
 St. John's College, Battersea—1; 0 (other students, 150).
 St. Mark's College, Chelsea—1; 0.
 Royal Academy of Music—5; 0 (other students, 571).
 Royal College of Music—10; 0 (other students, over 400).
 Trinity College of Music—5; 6 (other students, 644).
 Guildhall School of Music—3; 0 (other students, 2,200).
 Bethlem Royal Hospital—2.
 Brompton Hospital for Consumption and Diseases of the Chest—14; 0.
 Hospital for Sick Children—15; 0 (other students, 270).
 National Dental College—4; 0 (other students, 40).
 National Hospital for the Paralyzed and Epileptic—15; 0 (other students, 60).
 Royal London Ophthalmic Hospital—11; 0 (other students, 65).
 School of Pharmacy of the Pharmaceutical Society of Great Britain—2; 0 (other students, 77).

TABLE 7.—*New or provincial universities—Staff and students in 1912-13. (See Ch. IV.)*

Universities.	Total number of teaching staff.		Students.		Total number of students.		Arts.		Pure science.		Applied science.		Technology.		Agriculture.		Theology.	
	In 1903.	In 1913.	Full time.	Part time.	In 1903.	In 1913.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.
Manchester (Victoria University and Owens College).....	126	238	1,268	387	11,391	1,655	288	39	264	19	78	6	228	1	6	.....	3	28
Birmingham.....	107	166	898	125	807	1,013	144	19	104	17	87	32	161	27	0	0	0	0
Liverpool.....	118	232	883	429	638	1,312	306	125	197	35	87	.....	0	0	0	0	0	0
Leeds.....	100	162	664	458	1,820	1,112	168	86	132	47	(3)	(11)	.....	.....	50	125	0	0
Sheffield.....	62	146	345	2,187	1,764	2,532	54	458	21	37	109	1,574	.....	.....	0	0	0	0
Bristol.....	164	487	320	.....	807	.....	278	.....	101	.....	(4)	(4)	0	0	0	0	0	0

Universities.	Law.		Medicine.		Dentistry.		Pharmacy.		Teaching.		Music.		Fine arts.		Commerce.		Postgraduate.		Population of city, 1911.
	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	
Manchester (Victoria University and Owens College).....	56	159	23	.....	8	4	.....	723	204	4	9	6	2	16	30	131	166	714,333
Birmingham.....	0	150	27	.....	0	0	0	229	.....	0	0	0	0	46	5	54	30	525,833
Liverpool.....	22	43	200	174	20	.....	0	0	0	0	0	0	0	0	0	42	119	746,421
Leeds.....	(4)	(9)	(28)	.....	.....	.....	.....	1157	114	157	14	0	0	0	0	13	31	445,560
Sheffield.....	39	187	113	.....	.....	.....	.....	91	1	0	0	0	0	0	0	13	83	454,832
Bristol.....	20	24	10	.....	0	0	0	0	0	0	0	0	0	0	0	0	0	357,048

¹ Including 183 evening students in Owens College.

² Including applied sciences.

³ The figures in parentheses show the number of postgraduate students and are included in the total figures given for each faculty.

⁴ Day students.

⁵ Including technology.

⁶ See Merchant Venturers' College.

⁷ 231 students of the training department are included in the numbers for arts and pure science.

⁸ Evening students.

⁹ Including dentistry.

¹⁰ Including dentistry and pharmacy.

¹¹ Included elsewhere.

¹² Teachers.

TABLE 8.—*New or provincial universities—Financial statement, 1903-1913. (See Ch. IV.)*

Universities.	Years.	Fees.	Endow- ments (income).	Donations.	Local grants.	Parla- mentary grants.	Examina- tions and other sources.	Total income.	Total expendi- ture.	Total value of grounds, buildings, and equip- ment.
Manchester (Victoria University).....	1903	£22,972	£20,602	£640	£6,550	£24,870	£4,155	£41,278	£43,197	£593,224
1913				1,072				81,807	81,717	
Birmingham.....	1903	16,988	8,219	53	16,980	20,866	8,060	36,134	33,490	
1913								70,074	70,017	689,724
Liverpool.....	1903	21,470	14,724	2,942	11,916	24,440	1,808	29,601	36,682	
1913				6,242				80,601	80,576	430,358
Leeds.....	1903	14,499	8,608	1,970	14,459	22,723	1,924	31,502	34,871	
1913				1,882				64,117	63,606	826,000
Sheffield.....	1903	9,156	4,859	1,406	15,927	17,520	1,968	20,074	21,266	
1913								60,896	62,298	217,928
Bristol.....	1903	8,709	4,926	2,597	4,710	17,809	770	41,071	34,147	146,528
1913										
Total.....	1913	93,794	61,939	13,209	66,512	128,238	18,605	388,496	382,349	2,383,772

* Excluding equipment.

* Annual subscriptions.

1 Owens College.

TABLE 9.—Independent university colleges—Staff and students. (See Ch. V.)

Independent univer- sity colleges.	Total number of teach- ing staff.		Number of stu- dents.		Total number of stu- dents.		Arts.		Pure science.		Applied science.		Tech- nology.		Agricul- ture.		Theol- ogy.		Law.		Medi- cine.		Dentistry.		Phar- macy.		Teach- ing.		Music.		Fine arts.		Post- grad- uate.	
	In 1903.	In 1913.	Full time.	Part time.	In 1903.	In 1913.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.		
Reading.....	53	93	627	575	1,104	1,202	171	201	58	54	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Southampton (Hartley).....	.....	.....	53	168	534	702	109	.....	39	.....	18	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nottingham.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Exeter (Royal Albert Memorial).....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

1 And 50 students of miscellaneous subjects.

2 And commerce.

3 Including board dairy instruction.

4 Included in arts.

5 Day students, 321; evening students, 1,254.

6 Day students.

7 19 full-time instructors.

8 23 full-time instructors.

9 Including 346 Sunday evening classes in arts, science, and technology.

10 Including dentistry.

TABLE 10.—Independent university colleges—Financial statement. (See Ch. V.)

Independent university colleges.	Year.	Fees.	Endowments (income).	Donations.	Local grants.	Particular grants.	Examinations and other sources.	Total income.	Total expenditure.	Total value of grounds, buildings, and equipment.
Reading.....	1908	£7,816	£8,489	£1,488	22,008	128,416	2,780	£11,522	£12,988	£146,000
Southampton (Hartley).....	1913	2,142	518	31	4,680	4,432	10	11,784	11,315	85,100
Nottingham.....	1908	3,414	501	16	10,395	12,129	832	27,819	18,238	210,000
Exeter (Royal Albert Memorial).....	1908	2,709	28	16	4,037	2,565	199	9,555	6,387	60,000
1913-14								9,535		
Total.....	1913	16,476	9,479	725	19,992	29,461	1,863	77,991	65,932	450,100

1 And £1,300 from board of agriculture.

2 Exclusive of grounds and equipment.

3 Including donations. An endowment fund was inaugurated in 1911 and £5,000 promised and subscribed to date. The income of this fund not brought into the colleges' account, but is accumulating.

4 Including £1,042 exchequer contribution accounts.

5 Not including receipts for maintenance of students.

TABLE 11.—*Agricultural and technical colleges and schools—Staff and students.* (See Chs. VI and VII.)

Agricultural and technical colleges and schools.	Total number of teaching staff—		Number of students.		Total number of students—		Arts.		Pure sciences.		Applied science.		Technology.		Agriculture.	
	1903	1913	Full time.	Part time.	1903	1913	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.
Royal Technical College, Glasgow.....	87	159	389	1,221	4,937	4,908					11,373	11,221				
Heriot-Watt College, Edinburgh.....	120	140	252	2,837	4,125	3,119										
Municipal Technical College, Dundee.....	40	65	142	1,130	1,040	1,263							1,203			
West of Scotland Agricultural College, Glasgow.....	25	47	274	60	366	534										
Gordon's College, Aberdeen.....	43	65	219	1,175	998	1,394										
Municipal School of Technology, Manchester.....	70	164	248	14,255	5,166	4,887							229	14,255		
Merchant Venturers' Technical College, Bristol.....			484								62					
East London College, London.....		32	181	376		546	77	71	74	75	28	16				
South-Eastern Agricultural College, Wye, Kent.....	13	32	154	76	60	232									156	76
London School of Economics, London.....	17	72	270	1,867	1,002	2,137	26	19	1	1						
Imperial College of Science and Technology, South Kensington.....		86	789	108	608	897			112	18	11,567	11,29				
Goldsmiths' College, London.....	156	79	581	600		1,247	17	5		19			11,312			

Agricultural and technical colleges and schools.	Theology.		Law.		Medicine.		Dentistry.		Pharmacy.		Teaching.		Music.		Fine arts.		Postgraduate.	
	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.
Royal Technical College, Glasgow.....																		
Municipal School of Technology, Manchester.....																	16	
East London College, London.....																	19	25
London School of Economics, London.....	15 9		16 8	17 34													19 65	19 251
Imperial College of Science and Technology, South Kensington.....																		
Goldsmiths' College, London.....											20 506		(a)	(a)			110	61

1911-12.

Intercollegiate.

24 Intercollegiate.

17 33 Intercollegiate.

11 Including technology.

19 6 Intercollegiate.

19 1908; the college, in its present form, only opened in 1906.

19 7 Intercollegiate.

13 Including applied science.

20 Training department.

14 Engineering and building.

21 Nearly all take music in the training department.

1 And 4,298 evening students.

2 Standards raised since 1903 to university level.

3 Day.

4 Evening.

5 In winter; 200 in summer.

6 1905-6.

7 And 84 special day students.

TABLE 12.—*Agricultural and technical colleges and schools—Financial statement. (Chs. VI and VII.)*

Institutions.	Years.	Fees.	Endowments (income).	Donations.	Carnegie trust.	Local grants.	Parliamentary grants.	Examinations and other sources.	Total income.	Total expenditures.	Total value of grounds, buildings, and equipment.
Royal Technical College, Glasgow	1903	£6,718	£4,980	£77	£100	£910	£17,440	£1,410	£19,853	£19,233	£381,349
1913				700					32,259	34,668	
Heriot-Watt College, Edinburgh	1903	3,283	5,342			135	7,656	1,007	17,423	11,490	65,000
1913				0		0			2,772	2,135	
Municipal Technical College, Dundee	1903	1,065	470	550	0	0	5,600	340	7,475	7,500	79,500
1913									15,310	16,310	* 16,588
West of Scotland Agricultural College, Glasgow	1903-6	1,606	0	775	* 671	185	11,314	2,205	13,746	3,756	61,263
1913		4,040	* 1,059			80	5,977	* 690	11,849	10,508	
Gordon's College, Aberdeen	1903	10,934	0	(6)	0	20,379	13,677	1,105	26,492	121,327	380,000
1913									46,065	147,965	
Municipal School of Technology, Manchester	1903	1,770	20	3,601		1,680	2,112	71	9,255	9,255	* 46,000
1913		2,710		2,000		600	7,140	187	17,614	17,614	70,000
Marchant Venturers' Technical College, Bristol	1903	10,000	0	6,000	0	{ 10 3,000		0	10,217	12,801	
1913				6,500		{ 11 2,000			18,800	20,000	47,000
South-Eastern Agricultural College, Wye, Kent	1903	5,944	108	1,385		4,725	6,850	475	17,238	17,227	46,171
1913											
London School of Economics, London	1903	27,404	0		0	21,212	35,277	44	83,937	79,964	909,794
1913				0					21,065	26,312	
Imperial College of Science and Technology, South Kensington	1903	84,532	11,979	13,486	671	59,286	130,322	7,901	268,340	300,395	2,160,664
1913											
Goldsmiths' College, London	1913										
Total											

1 Since increased to £400.

2 For college extension.

3 Excluding grounds.

4 Including heritable property and Aberdeen endowments trust.

5 Including other returns for expenditure.

6 Almost entirely in the forms of plant and equipment.

7 Exclusive of (£15,000 in 1913) charges for sinking fund and interest re-capital account.

8 1911-12.

* Excluding grounds and equipment.

10 Kent; in return for work done.

11 Surrey.

12 The college in its present form only opened in 1906.

13 £6,999 received in training department.

14 London county council.

15 £6,664 for the training department.

TABLE 13.—*Women's colleges—Staff and students. (See Ch. VIII.)*

	Total number of teaching staff—		Number of students.		Total number of students—		Arts.		Pure science.		Applied science.		Technology.		Agriculture.	
	In 1908.	In 1913.	Full time.	Part time.	In 1908.	In 1913.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.	Full time.	Part time.
Women's colleges, 1913.	32	27	163	.....	1127	163	140	.....	20	.....	.....	.....	.....	.....	.....	.....
	12	13	225	0	168	225	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	13	16	67	0	51	67	65	.....	2	.....	.....	.....	.....	.....	.....	.....
	8	6	89	.....	74	89	81	.....	5	.....	.....	.....	.....	.....	.....	.....
	3	6	.....	.....	26	44	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	(*)	(*)	40	.....	22	40	37	.....	3	.....	0	0	0	0	0	0
	.....	.....	150	44	150	.....	.....	.....	55	5	13	.....	.....	.....	.....	.....
	32	52	327	35	349	362	192	30	55	5	13	.....	.....	.....	.....	.....
	53	53	80	337	.....	417	51	132	6	.....	.....	.....	.....	.....	.....	.....
	13	15	62	3	47	65	59	2	6	.....	.....	.....	.....	.....	.....	.....
Women's colleges, 1913.	27	29	154	.....	139	154	115	.....	35	.....	.....	.....	.....	.....	.....	.....

Women's colleges, 1913.	1	.....	2	.....	0	0	0	0	0	0	0	0	0	0	0	0

	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
	48	.....	.....	.....	.....	.....	.....	.....	38	.....	.....	.....	19	.....	.....	.....
	0	0	0	0	0	0	0	0	0	125	.....	.....	.....	.....	.....	.....
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

¹ Michaelmas term.
² Resident staff, excluding collegiate and university teachers.
³ Resident.
⁴ One resident tutor; others voluntary teachers and coaches.
⁵ Two resident and 7 nonresident tutors and several university coaches.
⁶ Including 14 at St. Frideswide's Hostel for R. C. students.
⁷ Home science.

TABLE 14.—*Women's colleges—Financial statement. (See Ch. VIII.)*

Women's colleges.	Years.	Fees.	Endowments (Income).	Donations.	Local grants.	Parliamentary grants.	Examinations and other sources.	Total income.	Total expenditures.	Total value of grounds, buildings, and equipment.
Glendon College, Cambridge.....	1903	£17,950	£556	£908	0	0	£641	£14,499	£13,300	£129,871
Neurham College, Cambridge.....	1903	21,627	1,950	1,873	0	0	171	15,583	16,014	10,874
Lady Margaret Hall, Oxford.....	1903	6,819	0	409	0	0	0	22,473	22,313	4,822
Bomarrville College, Oxford.....	1903	8,607	0	(*)	0	0	697	7,516	6,763	32,000
St. Hugh's College, Oxford.....	1903	2,937	0	30	0	0	216	6,822	6,673	26,149
St. Hilda's Hall, Oxford.....	1903	2,937	0	30	0	0	0	8,323	8,166	8,600
Society of Oxford Home Students, Oxford.....	1903	2,937	0	30	0	0	0	2,414	2,270	1,414
Bedford College, London.....	1903	15,184	613	143	650	7,949	2	1,414	1,385	2,986
King's College, London.....	1903	8,064	0	151	1,012	1,861	104	23,941	24,480	100,000
Westfield College, London.....	1903	6,466	296	121	0	0	136	8,327	8,104	4,709
Royal Holloway College, London.....	1903	16,444	10,773	0	0	0	1,594	6,803	7,132	32,816
Total.....	1913	99,128	14,188	3,322	1,662	9,840	3,941	21,471	25,331	725,300

1 £264 toward special fellowship fund.

2 Special building fund.

3 Exclusive of grounds.

4 Approximately.

5 Exclusive of endowments for specials.

* And £61,756 building fund.

* Exclusive of grounds.

* Endowment, £879; scholarships, £544.

* Cost.

TABLE 15.—*Range of salaries.* (See Ch. XI, p. 185.)

UNIVERSITIES.

- ABERDEEN.** Professors, \$3,000–\$6,500; lecturers, \$250–2,125; assistants, \$250–\$1,000.
- BIRMINGHAM.** Chairs: 1 at \$1,500; 8 at \$2,500; 10 at \$3,000; 1 at \$3,250; 1 at \$3,500; 2 at \$3,750; 3 at \$4,000; 2 at \$4,250; 1 at \$5,000; assistants and other members of teaching staff, 1 at \$550; 1 at \$650; 22 at \$750; 2 at \$800; 3 at \$875; 1 at \$900; 16 at \$1,000; 2 at \$1,250; 1 at \$1,375; 3 at \$1,500; 2 at \$2,000.
- BRISTOL.** The salaries of the staff vary up to a maximum of \$3,250. In the Merchant Venturers' College salaries vary up to \$2,175.
- CAMBRIDGE.** Professors, usually \$3,000–\$3,500; readers, usually \$1,500; lecturers and demonstrators, \$250–\$1,000. Often all these fixed amounts are increased by certain fees and college privileges.
- DURHAM.** Durham Colleges: Professors and lecturers, \$1,000–\$2,500; other members of staff, \$175–\$1,500. Armstrong College, Newcastle: Professors, \$2,500–\$3,000; lecturers and heads of departments, \$750–\$2,000; demonstrators, \$600–\$650. College of Medicine, Newcastle: 19 professors, 4 lecturers, and 8 demonstrators; salaries vary from \$52.25–\$3,750.
- EDINBURGH.** Chairs, \$3,000–\$8,000; lecturers, \$105–\$3,000; assistants or demonstrators, \$80–\$1,500. Heriot-Watt College: Professors, \$2,500–\$3,000; lecturers in charge of departments, \$1,500–\$2,000; assistant professors and other members of staff, \$400–\$1,125; lecturers and instructors for evening classes six months' winter session, \$100–\$750.
- GLASGOW.** Professors, \$2,500–\$6,000; lecturers, \$1,000–\$2,000; assistant lecturers, \$500–\$750. Royal Technical College: Professors, \$2,125–\$3,500; lecturers, \$1,000–\$1,625; other members of staff, \$500–\$1,000. West of Scotland Agricultural College: Professors, \$2,500; lecturers, \$750–\$1,500; other members of staff, \$400–\$750.
- LIVERPOOL.** Professors, \$2,500–\$5,000, with a share of fees; guaranteed minimum, \$3,000; lecturers in charge of departments, \$1,250–\$2,000, with a share of fees; assistant lecturers and demonstrators, \$375–\$750.
- LONDON.** Professors (full time), \$3,000–\$5,000; principal, \$10,000; readers, \$500–\$1,500; lecturers pro rata for work done; other members of clerical and official staff, \$7.25 per week to \$4,000 per annum. East London College: Professors, \$2,000–\$3,000; lecturers, \$800–\$1,750; assistant lecturers and demonstrators, \$250–\$1,250. Goldsmiths' College: Vice principals of training department (men) \$3,000, (women) \$2,650; heads of engineering department and school of art, \$2,000 each; lecturers, \$1,000–\$1,750 (men), \$800–\$1,250 (women); physical instructress, \$750; assistants in domestic subjects, manual instruction, etc., at various salaries. Imperial College: Professors in charge of departments, \$5,000–\$6,250; professors not in charge of departments, \$3,000–\$4,500; assistant professors, \$1,500–\$2,500; lecturers, \$1,000–\$1,500; demonstrators, \$750–\$1,000; assistant demonstrators, \$500–\$600; in each appointment to a professorship pension and salary specially considered and determined. Kings College for Men and Women: Professors, \$1,750–\$5,000; assistant professors and lecturers, \$1,000–\$2,750; assistant lecturers and demonstrators, \$750–\$1,000; junior assistants and demonstrators, \$500. School of Economics: Professors or lecturers, \$3,000; readers, \$1,500; part-time lecturers, from a small fee to \$2,500. University College: Professors, \$2,000–\$5,000; readers, from \$1,500; lecturers, two-thirds of fees, varying from \$125–\$1,000; assistant professors and demonstrators, \$250–\$1,750.
- MANCHESTER.** (Victoria): Professors, \$2,500–\$7,500, including a share of fees; lecturers (independent), \$1,500; lecturers under direction of professor, \$1,000–\$2,500; senior assistant lecturer or demonstrator, \$750–\$900; junior assistant lecturer or demonstrator, \$750. Municipal School of Technology: Professors, \$2,000–\$3,500; lecturers, \$1,250–\$2,500; assistant lecturers, \$600–\$1,250.
- OXFORD.** Professors, \$4,500–\$5,000; readers, usually \$1,500, with additional fees; tutors, usually \$1,000 and additional fees.
- ST. ANDREWS.** Professors, \$2,750–\$3,750; lecturers, \$500–\$1,750; assistants, \$500–\$1,000. Dundee: Professors, \$2,000–\$3,000; lecturers, \$750–\$1,500; assistants and demonstrators, \$500–\$1,000.
- SHEFFIELD.** Professors, \$2,000–\$5,500; lecturers and demonstrators, \$500–\$1,750.

INDEPENDENT UNIVERSITY COLLEGES.

- EXETER UNIVERSITY COLLEGE.** Professors, \$1,250–\$1,800; lecturers, \$550–\$1,175.
- NOTTINGHAM UNIVERSITY COLLEGE.** Professors (heads of departments), \$1,550–\$3,625; lecturers and demonstrators, \$650–\$1,400; evening lecturers and occasional class professors paid by hour or term.

READING UNIVERSITY COLLEGE. Eleven professors, \$1,100-\$2,870; several permitted to do outside work; lecturers, \$750-\$1,750; assistant lecturers, \$500-\$750; teachers, \$125-\$500; laboratory assistant, \$200-\$450; laboratory boys, \$75-\$200; all members of staff are paid by fixed stipends except certain music teachers.

SOUTHAMPTON HARTLEY UNIVERSITY COLLEGE. Professors, \$1,250-\$1,750; 1 professor, \$2,000; lecturers, \$700-\$1,000; 1 lecturer \$1,125.

WOMEN'S COLLEGES.

BEDFORD COLLEGE, LONDON. Professors, \$3,000; lecturers, \$2,000; part-time lecturers, \$1500; assistant lecturers, \$825-\$1,000; assistants and demonstrators, \$600-\$750.

GIRTON, CAMBRIDGE. Lecturers are paid by the hour for the teaching given.

KINGS COLLEGE FOR WOMEN. See under London.

LADY MARGARET HALL, OXFORD. Professors, \$750 guaranteed (always exceeded). A guaranty of \$750 is given to the resident members of teaching staff.

NEWNHAM, CAMBRIDGE. Lecturers, \$600-\$800, with board and lodging and pension, and fees for teaching given over the minimum salary; other members of staff, \$600-\$800, with board and lodging and pension.

ROYAL HOLLOWAY COLLEGE, LONDON. Professors, \$3,000; lecturers, \$600 minimum, with board and residence.

ST. HILDA'S HALL, OXFORD. Principal, \$1,000, with board and residence; house bursar, \$375, with board and residence; tutors and lecturers, \$750-\$1,000; tutors have a fixed salary of \$250, with board and residence and a guaranty of \$500 if tuition fees do not reach that sum.

ST. HUGH'S COLLEGE, OXFORD. Principal, \$825; vice principal, \$325; teachers and lecturers, \$400-\$1,250; teachers are paid according to the time they give.

SOMERVILLE COLLEGE, OXFORD. Tutors, \$1,000-\$1,500; a tutor has a guaranteed minimum salary of \$600, with board and residence. This sum always exceeded.

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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1917, No. 17

ACCREDITED HIGHER INSTITUTIONS

BY

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SPECIALIST IN HIGHER EDUCATION
BUREAU OF EDUCATION



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LETTER OF TRANSMITTAL

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, February 9, 1917.

SIR: Various agencies in the United States maintain lists of collegiate institutions whose graduates are given certain academic or professional privileges. Very few of these lists have received widespread publicity. The criteria in accordance with which the lists are made up vary. Consequently, there is a great and growing uncertainty as to what is meant by the term "recognized" or "approved" or "accredited" college. It has been felt that a compilation of such of these lists as are prepared by public or nonsectarian agencies will be useful to educational officers, and in the end will contribute toward the establishment of more definite standards for collegiate work. I have, accordingly, requested Dr. S. P. Capen, the bureau's specialist in higher education, to prepare such a compilation, which is transmitted herewith for publication as a bulletin of the Bureau of Education under the title "Accredited Higher Institutions."

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

THE SECRETARY OF THE INTERIOR.

ACCREDITED HIGHER INSTITUTIONS.

The impression prevails that there exists some authoritative classification of higher institutions, a classification which has behind it the sanction of the Government. It is true that the Bureau of Education prepared in 1911 a tentative classification of colleges, on the basis of the value of the bachelor's degree. This document was never formally published, and no effort has been made to correct, in accordance with the current changes in institutional standards and resources, the information on which it was based. **There is no comprehensive classification of collegiate institutions by any governmental agency.**

Classifications appear to be necessary for various purposes, however, and in default of action by the Government those groups of educational officials who need them have been forced to make their own. State departments of education, State universities, educational foundations, voluntary associations, and certain of the larger universities which maintain graduate schools, as well as church boards of education and other denominational bodies have for some years gradually been elaborating lists of institutions whose standards they are willing, as the result of special information, to approve. Probably the extent to which this process has been carried on has not been generally known. The facts have seemed to the Bureau of Education to be worth recording, both because of their bearing on an important phase of higher education in the United States and for the assistance of educational officers who deal with questions of advanced credits.

Accordingly, in March, 1916, the Bureau of Education issued a general inquiry designed to secure from various nonsectarian agencies the lists of collegiate institutions approved by each, together with statements of the criteria by which inclusion in each list is determined. The material submitted in response to this inquiry is published herewith. To it have been added the lists already in print prepared by certain widely influential organizations. Each list is the latest one which had been issued or prepared by the body in question at the time of the inquiry. A few lists have since been revised. Owing to the delay attendant on securing returns, the bureau

has not attempted to include these revisions, however.¹ The bulletin represents the status of collegiate accrediting by official and semi-official nonsectarian agencies as late as April, 1916.

PURPOSES AND PROCEDURE OF ACCREDITING AGENCIES.

The lists represent four types of procedure in classification. State universities are generally under the necessity of defining the terms on which students coming from other collegiate institutions (as a rule from institutions in the same State) will be received. Some State universities accredit colleges from which undergraduate students will be accepted on transfer, some accredit colleges whose graduates will be admitted to the graduate school as candidates for advanced degrees, and some accredit colleges on both bases. Their sources of information regarding accredited institutions are various. More or less definite knowledge of the standards of colleges in the home State is commonly possessed by State university officials as the result of visits to these institutions and of past experience with students who have been transferred from them. Where a State university accredits institutions in other States, it is customary to rely on the ratings given by the State universities of those States or by some trustworthy nonofficial body.

The lists of institutions accredited by State departments of education contain chiefly the names of universities, colleges, and normal schools whose graduates are eligible to receive certain kinds of teachers' certificates without examination. Generally, departments of education accredit only institutions in their own States. Some of them have developed more or less adequate machinery for inspecting these institutions. Some depend largely on reports and desultory information. Where the attempt is made to cover a wider territory than a single State, reliance is usually placed on the action of the accrediting bodies in whose bailiwick the institutions in question are located. There are certain exceptions to this method, notably, for example, the practice of the New York State Department of Education, which conducts a painstaking inquiry into the standards of all institutions wherever situated that apply for rating. (The last printed list of institutions recognized by the New York department of education, issued in 1913, is not published here for the reason that it is under careful revision.)

The lists prepared by voluntary associations, like the North Central Association of Colleges and Secondary Schools and the Asso-

¹ Exception was made in the cases of the lists of the State universities and education departments of the following States, which specially requested the bureau to bring their lists up to date: State universities of Minnesota, Texas, Washington; education departments of Illinois, Ohio, Texas, and Washington.

ciation of American Universities and by the Carnegie Foundation for the Advancement of Teaching, represent an effort to define and to elevate higher educational standards over wide areas. They are not designed primarily to determine questions of credits or eligibility for official credentials, although this may be a secondary object. Their preparation is based on a detailed study of the standards and resources of the institutions concerned.

The fourth type of classification is exemplified in the restricted membership lists of certain organizations, like the Association of Colleges and Secondary Schools of the Southern States. Collegiate institutions are admitted to membership in these bodies only when, upon investigation by the association's officers, they are found to meet the prescribed conditions of equipment, support, and academic requirements. The effect of this kind of classification on higher educational standards in the region covered by the association is essentially the same as that of the third type just mentioned.

CONTENTS OF THE BULLETIN.

The bulletin is divided into four parts. Part I contains lists of institutions accredited by State universities. At the head of each list the purpose for which the institutions included in it are accredited and the basis of approval are clearly stated. In those cases where State universities have no formal lists of accredited institutions, but, in judging the eligibility for advanced rating of candidates from other colleges, apply definite standards to the institutions from which candidates come, those standards are quoted. If a State institution has no regular formal procedure with reference to students coming from other colleges, that fact is also stated.

Part II contains lists of institutions accredited by State departments of education. Each list is headed by an outline of the purpose and basis for accrediting adopted by the department in question.

Part III contains lists of recognized or approved colleges prepared by the influential voluntary organizations of secondary and higher institutions referred to above and by the Carnegie Foundation for the Advancement of Teaching. Not all the voluntary associations known to have adopted some sort of academic standards to test eligibility for recognition or for membership are included in this group, but only those whose sphere of operations is sectional (in the sense of covering several States) or national.

A secondary purpose of the bulletin is to show the extent to which junior colleges have been established in various parts of the country and recognized by accrediting agencies. The lists of accredited junior colleges are therefore presented separately. As typical of the relationship existing between junior colleges and State universities, the plan of affiliation adopted by the University of Missouri may be cited.

COMMENT.

An examination of the lists as a whole leads to certain generalizations in regard to the present status of collegiate classification or standardization. These might be summarized as follows: (1) A large number of agencies are now attempting, for urgent official reasons, to pass on the standing of higher institutions. (2) A great variety of standards is applied. The criteria imposed by some of the classifying organizations constitute real tests of collegiate resources. The reader of the bulletin can in most cases tell from the summarized statements at the beginning of the lists which may be so regarded. The basis for classification reported by several of the classifying agencies, on the other hand, is very vague. The person who has intimate knowledge of many colleges may believe that a few of the lists have been framed partly by guesswork. (3) Such standardization or classification as has been attempted is for various purposes. (4) There is a tendency for a local standardizing agency (and most are local) to include by courtesy in its lists of recognized institutions all colleges in its district. (5) There is no practical consensus of opinion as to what constitutes that much-talked-of entity, the standard college.

It is hoped that the material in this bulletin will help to give point to future considerations of this important subject, by showing at least what is the present practice of the principal standardizing bodies. It is realized that, numerous as the lists are, some classifying organizations may have been omitted from the bulletin aside from the local associations, universities on private foundations, and sectarian boards, which were omitted by design.

It should be emphasized that the colleges and universities listed in this bulletin are not accredited or approved by the Bureau of Education. Inclusion in this bulletin does not imply governmental recognition. The Bureau of Education makes no attempt to rate or to standardize the collegiate institutions of the country.

PART I.—INSTITUTIONS ACCREDITED BY STATE UNIVERSITIES.

ALABAMA.

Recognition of the collegiate institutions of the State by the University of Alabama is based on actual knowledge of the institutions' requirements for admission and graduation; knowledge of the character of their equipment and faculty; and the opportunity had by the university of testing the work of students who have transferred from these institutions to the university. Students so transferring are granted full credit for the work completed at the institution previously attended, provided they present the equivalent of a high-school diploma and have pursued a course leading to a standard degree.

Alabama Polytechnic Institute, Auburn.
Athens Female College, Athens.
Birmingham College, Birmingham.
Howard College, Birmingham.

Judson College, Marion.
Southern University, Greensboro.
Woman's College of Alabama, Montgomery.

ARIZONA.

The University of Arizona does not have a list of accredited colleges. Advanced standing is granted on the basis of work done in a standard college. "In general, the basis for recognizing a school as a standard college is a report of the Carnegie Foundation or the North Central Association." Students from accredited institutions are granted hour-for-hour credit and are given class standing in accordance with the requirements of the university.

ARKANSAS.

The following is the practice of the University of Arkansas in dealing with applications for advanced credits of students from institutions both within and without the State:

The University of Arkansas has no fixed and definite list of colleges and universities whose work it accepts or approves. In dealing with institutions outside the State the custom is to call upon the State university of the given State for information, in case the institution concerned is one that is not so well known as to enable us to fix its standing otherwise.

In the case of students coming from institutions found to be of recognized standing, the custom here is to grant to such students an amount of credit proportionate to the work they have done in the other institution.

In general, the cases of students coming from those institutions in the State of Arkansas are taken up individually, and they are given a certain amount of credit contingent upon their making good in their university work.

CALIFORNIA.

The basis upon which the following list of institutions is made is the experience of the University of California with students coming

from certain of them, the lists prepared by the Carnegie Foundation for the Advancement of Teaching and published by the Association of American Universities, the experience of institutions in the Association of American Universities, and the tentative list prepared by the United States Bureau of Education in 1911.

Students presenting the bachelor's degree from any of the accredited institutions may enter the graduate division of the University of California without previous evaluation of their credentials. Admission, however, is without classification with reference to candidacy for an advanced degree.

Alabama: University of Alabama, University.

Arizona: University of Arizona (engineering), Tucson.

California:

Leland Stanford Junior University, Stanford University.

Mills College (recent degrees), Mills College.

Occidental College, Los Angeles.

Pomona College, Claremont.

University of California, Berkeley.

University of Southern California (very recent degrees), Los Angeles.

Colorado:

Colorado Agricultural College (science and engineering), Fort Collins.

Colorado College, Colorado Springs.

University of Colorado, Boulder.

University of Denver, University Park.

Connecticut:

Sheffield Scientific School (Yale University), New Haven.

Wesleyan University, Middletown.

Yale University, New Haven.

District of Columbia:

Catholic University of America, Washington.

George Washington University, Washington.

Georgetown University, Washington.

Florida: John B. Stetson University, DeLand.

Georgia:

Agnes Scott College, Decatur.

Emory College, Oxford.

University of Georgia, Athens.

Idaho: University of Idaho, Moscow.

Illinois:

Armour Institute of Technology, Chicago.

Augustana College, Rock Island.

Illinois College (arts degrees), Jacksonville.

James Millikin University, Decatur.

Knox College, Galesburg.

Lake Forest College, Lake Forest.

Lewis Institute (engineering), Chicago.

Lombard College, Galesburg.

Monmouth College (recent degrees), Monmouth.

Northwestern University, Evanston.

Illinois—Continued.

Rockford College, Rockford.

University of Chicago, Chicago.

University of Illinois, Urbana.

Indiana:

Butler College, Indianapolis.

De Pauw University, Greencastle.

Earlham College, Earlham.

Franklin College, Franklin.

Hanover College, Hanover.

Indiana State Normal School, Terre Haute.

Indiana University, Bloomington.

Purdue University, Lafayette.

Rose Polytechnic Institute, Terre Haute.

University of Notre Dame, Notre Dame.

Wabash College, Crawfordsville.

Iowa:

Coe College, Cedar Rapids.

Cornell College, Mount Vernon.

Des Moines College, Des Moines.

Drake University, Des Moines.

Grinnell College, Grinnell.

Iowa State College of Agriculture and Mechanic Arts, Ames.

Iowa State Teachers College, Cedar Falls.

Luther College (literary), Decorah.

Morningside College, Sioux City.

Parsons College, Fairfield.

Penn College, Oskaloosa.

State University of Iowa, Iowa City.

Kansas:

Baker University, Baldwin City.

Bethany College, Lindsborg.

College of Emporia, Emporia.

Fairmount College, Wichita.

Friends University, Wichita.

Midland College, Atchison.

Ottawa University, Ottawa.

Southwestern College, Winfield.

University of Kansas, Lawrence.

Washburn College, Topeka.

Kentucky:

Central University of Kentucky, Danville.

Georgetown College, Georgetown.

State University of Kentucky, Lexington.

Louisiana :

Louisiana State University, Baton Rouge.
Tulane University of Louisiana, New Orleans.

Maine :

Bates College, Lewiston.
Bowdoin College, Brunswick.
Colby College, Waterville.
University of Maine, Orono.

Maryland :

Goucher College, Baltimore.
Johns Hopkins University, Baltimore.
Loyola College, Baltimore.
Maryland State College of Agriculture, College Park.
Mount St. Mary's College, Emmitsburg.
Rock Hill College, Ellicott City.
St. John's College, Annapolis.
Washington College, Chestertown.
Western Maryland College, Westminster.

Massachusetts :

Amherst College, Amherst.
Boston College, Boston.
Boston University, Boston.
Clark College, Worcester.
Clark University, Worcester.
Harvard College, Cambridge.
Holy Cross College, Worcester.
Massachusetts Agricultural College (science), Amherst.
Massachusetts Institute of Technology, Cambridge.
Mount Holyoke College, South Hadley.
Radcliffe College, Cambridge.
Smith College, Northampton.
Tufts College, Tufts College.
Wellesley College, Wellesley.
Williams College, Williamstown.
Worcester Polytechnic Institute (science and engineering), Worcester.

Michigan :

Adrian College, Adrian.
Albion College, Albion.
Alma College, Alma.
Hillsdale College, Hillsdale.
Hope College, Holland.
Kalamazoo College, Kalamazoo.
Michigan Agricultural College, East Lansing.
Michigan College of Mines, Houghton.
Olivet College, Olivet.
University of Detroit, Detroit.
University of Michigan, Ann Arbor.

Minnesota :

Carleton College, Northfield.
Gustavus Adolphus College, St. Peter.
Hamline University, St. Paul.
Macalester College, St. Paul.
St. Olaf College, Northfield.
University of Minnesota, Minneapolis.

Missouri :

Central College, Fayette.
Drury College, Springfield.
Missouri Valley College, Marshall.
Park College, Parkville.
Tarkio College, Tarkio.

Missouri—Continued.

University of Missouri, Columbia.
Washington University, St. Louis.
Westminster College, Fulton.
William Jewell College, Liberty.

Montana : University of Montana, Missoula.

Nebraska :

Bellevue College, Bellevue.
Cotner University, Bethany.
Creighton University, Omaha.
Doane College, Crete.
Grand Island College, Grand Island.
Hastings College, Hastings.
Nebraska Wesleyan University, University Place.
Union College, College View.
University of Nebraska, Lincoln.
University of Omaha, Omaha.
York College, York.

Nevada : University of Nevada (sciences and mining engineering), Reno.

New Hampshire :

Dartmouth College, Hanover.
New Hampshire College of Agriculture and Mechanic Arts, Durham.

New Jersey :

Princeton University, Princeton.
Rutgers College (except technical B. S.), New Brunswick.
Stevens Institute of Technology, Hoboken.

New Mexico : New Mexico College of Agriculture and Mechanic Arts, State College.

New York :

Adelphi College, Brooklyn.
Alfred University, Alfred.
Barnard College, New York.
Brooklyn Polytechnic Institute, Brooklyn.
Canisius College, Buffalo.
Cathedral College, New York.
Clarkson School of Technology, Potsdam.
Colgate University, Hamilton.
College of the City of New York, New York.
Columbia University, New York.
Cornell University, Ithaca.
D'Youville College, Buffalo.
Elmira College, Elmira.
Fordham University, Fordham.
Hamilton College, Clinton.
Hobart College, Geneva.
Hunter College of the City of New York, New York.
Manhattan College, New York.
New York State Normal College, Albany.
New York University (College of Arts, School of Applied Science), New York.
Niagara University, Niagara University.
Rensselaer Polytechnic Institute (C. E.), Troy.

New York—Continued.

St. Francis Xavier College, New York.
 St. John's College, Brooklyn.
 St. Lawrence University, Canton.
 St. Stephen's College, Annandale.
 Syracuse University, Syracuse.
 Union University, Schenectady.
 University of Rochester, Rochester.
 University of the State of New York,
 Albany.
 Vassar College, Poughkeepsie.
 Wells College, Aurora.

North Carolina:

Davidson College, Davidson.
 Trinity College, Durham.
 University of North Carolina, Chapel
 Hill.
 Wake Forest College (recent degrees),
 Wake Forest.

North Dakota:

Fargo College, Fargo.
 University of North Dakota, Univer-
 sity.

Ohio:

Case School of Applied Science, Cleve-
 land.
 College of Wooster, Wooster.
 Denison University, Granville.
 Kenyon College, Gambier.
 Lake Erie College, Painesville.
 Marietta College, Marietta.
 Miami University, Oxford.
 Municipal University of Akron (sci-
 ence), Akron.
 Mount Union College, Alliance.
 Oberlin College, Oberlin.
 Ohio State University, Columbus.
 Ohio University (except Normal Col-
 lege), Athens.
 Ohio Wesleyan University, Delaware.
 Otterbein University, Westerville.
 University of Cincinnati, Cincinnati.
 Western College for Women, Oxford.
 Western Reserve University, Cleveland.

Oklahoma: University of Oklahoma, Nor-
 man.

Oregon:

Pacific University, Forest Grove.
 Reed College, Portland.
 University of Oregon, Eugene.
 Willamette University, Salem.

Pennsylvania:

Allegheny College, Meadville.
 Bryn Mawr College, Bryn Mawr.
 Bucknell University, Lewisburg.
 Dickinson College, Carlisle.
 Franklin and Marshall College, Lan-
 caster.
 Haverford College, Haverford.
 Lafayette College, Easton.
 Lebanon Valley College, Annville.
 Lehigh University, South Bethlehem.
 Muhlenberg College, Allentown.
 Pennsylvania College, Gettysburg.
 Pennsylvania State College, State Col-
 lege.

Pennsylvania—Continued.

Susquehanna University, Selinsgrove.
 Swarthmore College, Swarthmore.
 Temple University, Philadelphia.
 University of Pennsylvania, Philadel-
 phia.

University of Pittsburgh, Pittsburgh.
 Ursinus College, Collegeville.
 Washington and Jefferson College,
 Washington.

Wilson College, Chambersburg.

Rhode Island: Brown University (except
 recent degrees), Providence.

South Carolina:

Converse College, Spartanburg.
 Wofford College, Spartanburg.

South Dakota:

University of South Dakota, Vermillion.
 Yankton College, Yankton.

Tennessee:

Maryville College, Maryville.
 University of Tennessee, Knoxville.
 University of the South, Sewanee.
 Vanderbilt University, Nashville.

Texas:

Baylor University, Waco.
 Southwestern University, Georgetown.
 Trinity University, Waxahachie.
 University of Texas, Austin.

Utah: University of Utah, Salt Lake City.
 Vermont:

Middlebury College, Middlebury.
 University of Vermont, Burlington.

Virginia:

College of William and Mary, Wil-
 liamsburg.
 Emory and Henry College, Emory.
 Hampden-Sidney College, Hampden-
 Sidney.
 Randolph-Macon College, Ashland.
 Randolph-Macon Woman's College,
 Lynchburg.
 Richmond College, Richmond.
 Roanoke College, Salem.
 University of Virginia, Charlottesville.
 Washington and Lee University, Lex-
 ington.

Washington:

State College of Washington, Pullman.
 University of Washington, Seattle.
 Whitman College, Walla Walla.

West Virginia: West Virginia University,
 Morgantown.

Wisconsin:

Beloit College, Beloit.
 Carroll College, Waukesha.
 Lawrence College, Appleton.
 Marquette University, Milwaukee.
 Milton College, Milton.
 Milwaukee-Downer College, Milwaukee.
 Northwestern College, Watertown.
 Ripon College, Ripon.
 St. Clara College and Academy, Sin-
 sinawa.

University of Wisconsin, Madison.

Wyoming: University of Wyoming, Laramie.

COLORADO.

The University of Colorado has no official list of approved institutions. In estimating the advanced standing to be given applicants the university makes use largely of the tentative classification prepared by the United States Bureau of Education in 1911. It also consults the State universities or other recognized institutions in the States from which applications for advanced standing come.

FLORIDA.

The basis for accrediting institutions by the University of Florida is the fact that the schools maintain the same standard in their courses as the university and that they have adequate facilities, equipment, and endowment for carrying on their work.

Florida State College for Women, Tallahassee.
John B. Stetson University, Deland.
Rollins College, Winter Park.

GEORGIA.

The University of Georgia has no list of accredited colleges.

IDAHO.

The University of Idaho has no formal list of accredited colleges. It accepts at full credit students from the State universities and such institutions as the University of Chicago, Wellesley College, Harvard University, etc.

ILLINOIS.

The University of Illinois has as yet made no formal list of accredited colleges. With a view to this end two committees, a committee of the executive faculty of the graduate school and a committee on the transfer of credits, have been working for two years. Tentative ratings have been made, but these are not ready for publication. The rating of institutions will be in accordance with the following standards and regulations:

1. A graduation requirement of four years (120 semester hours) of collegiate grade.
2. A minimum entrance requirement of 14 units. By the minimum requirement is meant the smallest number of units with which a student may be permitted to begin college work, i. e., the nominal requirement minus the number of units of conditions allowed.
3. A requirement that all entrance conditions must be removed before a student may be permitted to begin a second year of work in the same institution.
4. Not less than eight distinct departments in liberal arts and sciences, with at least one professor giving full time to college work in each department.

5. A minimum scholastic preparation of all college teachers of academic subjects equivalent to graduation from a college of high grade and graduate work equal to that required for the master's degree of the University of Illinois.

6. A maximum of 16 semester hours per week required of college teachers.

7. A maximum enrollment of 30 students in recitation or laboratory sections.

8. Buildings and equipment of the value of at least \$100,000.

9. A productive endowment sufficient to yield a net annual income of at least \$10,000 available for instructional purposes in the college department (liberal arts and sciences).

10. A library of not less than 10,000 bound volumes in addition to public documents.

11. Laboratory equipment of a value of not less than \$3,000 in physics (\$4,000 if work is offered in advance of one-year course); \$2,500 in chemistry; and \$2,500 in biology.

12. Lighting, heating, ventilation, water supply, arrangement of laboratories, corridors, and closets, and methods of cleaning such as to insure hygienic conditions.

13. In addition to the foregoing specific requirements, the general standards and spirit of the administration and faculty shall be considered.

Higher institutions from which students apply for advanced standing shall be grouped for the present in seven classes:

1. *Colleges of Class A Plus.*—This class shall include institutions which meet in full all the criterions of a standard college (given above).

Students from institutions rated in Class A Plus shall receive hour-for-hour credit.

2. *Colleges of Class A.*—This class shall include institutions which approximate the standard set for Class A Plus, but fall short of it in certain particulars. For example, a college which has but 6 departments instead of 8, or permits two years instead of one for the removal of conditions, or has one or two members on its staff with only a bachelor's degree, or is slightly short of the standard set for the library or laboratory equipment, would fall in this class.

Students from institutions rated in Class A shall receive substantially hour-for-hour credit up to a maximum of 30 hours per year, except in specific departments as may be noted in the rating of the individual institution.

3. *Colleges of Class B.*—This class shall include institutions which, while of collegiate character and standards, fall short in more important particulars of the standard set for Class A Plus.

Students from institutions rated in Class B shall receive approximately three-fourths credit up to a maximum of 24 hours per year, except in specific departments as may be noted in the rating of the individual institution. This means that a student who offers three years of work from a college of Class B would receive at the most 72 hours and would have to spend two years to get his degree from the University of Illinois; in other words, it represents a differential of one year toward that degree.

4. *Colleges of Class C.*—This class shall include institutions which, while organized and designated as colleges, appear to be in reality little more than secondary schools.

Students from institutions of Class C may receive, in departments to be specifically designated in each case, approximately one-half credit up to a total maximum of 36 hours.

INDIANA.

Indiana University accepts the rating of collegiate institutions given by the State board of education,¹ and equivalent credit is given to students from such institutions, provided their work has been in the subjects belonging to the university college curriculum. Graduates of these institutions are admitted to the graduate school of Indiana University if, in the judgment of the departments concerned, they have had sufficient work in a major subject to prepare them for graduate work in the university in that subject.

Butler College, Indianapolis.
De Pauw University, Greencastle.
Earlham College, Earlham.
Franklin College, Franklin.
Hanover College, Hanover.

Notre Dame University, Notre Dame.
Purdue University, Lafayette.
St. Mary's College, Notre Dame.
Wabash College, Crawfordsville.

IOWA.

The University of Iowa has no list of accredited colleges. It accepts students from all the collegiate institutions of the State, with such credits as each individual case deserves.

KANSAS.

Collegiate institutions are accredited by the University of Kansas for the acceptance of entrance requirements, acceptance of the college credits at face value, and unconditional admission to the university graduate school of holders of bachelor's degrees from the colleges accredited.

Baker University, Baldwin City.
Bethany College, Lindsborg.
College of Emporia, Emporia.
Cooper College, Sterling.
Fairmount College, Wichita.

Friends University, Wichita.
Kansas Wesleyan University, Salina.
Ottawa University, Ottawa.
Southwestern College, Winfield.
Washburn, College, Topeka.

KENTUCKY.

As a member of the Kentucky Association of Colleges, the State University of Kentucky agrees to accept the work done in any or all of the other colleges which are members of the association. The conditions required for membership are as follows:

ARTICLE 1, SEC. 2. Members of the faculty of any other college or university in Kentucky which employs at least six professors, giving their entire professional time to college or university work, and which requires for the baccalaureate degree the completion of a regular four-year curriculum, embracing at least 120 semester hours, exclusive of physical training, and which requires for entrance to its freshman class not less than 15 units, approved by the committee on accredited schools of this association, and has from tuition and other

¹ See p. 32.

regular funds an income of not less than \$15,000 per year, and has accessible to its students a library adequate to the needs of the various departments, systematically catalogued, and has laboratory equipment sufficient for giving at least two years of work in each of the elementary sciences (biology, chemistry, and physics), shall be eligible to membership in this association, and shall be recognized as members upon the acceptance of the institution to which they belong by the executive committee of this association.

The other members of the association are (September, 1916):

Berea College, Berea.
Centre College of Kentucky, Danville.
Georgetown College, Georgetown.

Kentucky Wesleyan College, Winchester.
Transylvania College, Lexington.
University of Louisville, Louisville.

LOUISIANA.

The following constitutes the practice of the Louisiana State University in accrediting institutions for the acceptance of advanced credits of students transferring from them to the university:

I. The Louisiana State University has no list of individual institutions the work of which it accepts at a fixed value; but for the purpose of accrediting the work of undergraduates who transfer to this institution, and for the purpose of admitting graduates who wish to pursue work leading to the master's degree in this university, it recognizes all institutions which are members of any of the following associations:

The Association of Colleges and Secondary Schools of the Southern States.
The North Central Association of Colleges and Secondary Schools.
The Association of Colleges and Preparatory Schools of the Middle States and Maryland.
The New England Association of Colleges and Secondary Schools.

Institutions which are not members of the associations named above, but which are members of the Association of American Universities or which are on the accepted list of the Carnegie Foundation for the Advancement of Teaching will also be recognized.

Those institutions not included in the above lists which, however, offer a four-year college course, after admission requirements amounting to four years of high-school work, may also be recognized. These are for the most part church colleges. In dealing with a student coming to us from one of these institutions, the matter is usually referred to the State university of the State in which the institution in question is located. The Louisiana State University will usually accept the rating given by this State university.

II. The institution accredited must require for admission four years of secondary work, and must offer a four-year college course leading to the degree of bachelor of arts or bachelor of science. If not a member of one of the associations named above, it must be recognized by the State university in the State in which it is located.

III. A graduate of a recognized institution will be admitted to graduate standing in the Louisiana State University and will be permitted to qualify for the master's degree in one year. No work above the grade of the master's degree is offered by the Louisiana State University.

Undergraduates coming from recognized institutions may transfer to the Louisiana State University and receive full credit for their work. However, in case of all undergraduates, the Louisiana State University requires that the transferred student meet its specific admission requirements as well as its specific curriculum requirements.

MAINE.

The University of Maine accepts students from all colleges that meet the Carnegie standard. Students coming from such colleges have their credits transferred at par.

MICHIGAN.

The University of Michigan publishes no list of approved collegiate institutions. Applications for admission on advanced credit are settled on their merits, each case being dealt with individually. The university reserves the right to revise all advanced credit accounts after a student has been in residence a year.

MINNESOTA.

The University of Minnesota publishes no list of approved colleges. It bases its attitude toward the various collegiate institutions of the State on the reports of investigating committees which it sends out. Institutions which such reports show to have entrance standards corresponding to those of the university, which offer four full years of college work, with equipment and teaching staff comparing favorably with those of the university, are accorded full recognition. Students transferring to the university from these recognized colleges are entitled to corresponding rank at the university, provided that in no case will more than three years of advanced standing be granted to candidates for the bachelor's degree. Graduates of the recognized institutions are admitted to the graduate school of the university without examination, the time necessary to secure the master's degree depending upon the extent to which the student has specialized in his major subject.

Carleton College, Northfield.
College of St. Catherine, St. Paul.
College of St. Teresa, Winona.
Gustavus Adolphus College, St. Peter.
Hamline University, St. Paul.

Macalester College, St. Paul.
Red Wing Seminary, Red Wing.
St. Olaf College, Northfield.
St. Thomas College, St. Paul.

Colleges in the State having accredited relations with the university, whose students may receive credit to the amount of two years, are:

Albert Lea College, Albert Lea.
Augsburg Seminary, Minneapolis.
Concordia College, Moorhead.

Concordia College, St. Paul.
Park Region Luther College, Fergus Falls.
St. John's College, Collegeville.

MISSISSIPPI.

Graduates of the following collegiate institutions are admitted to such A. M. courses at the University of Mississippi as they may be

qualified to take. Credits from these colleges are, in general, accepted at their face value by the university. The institutions are on the 14-unit basis and give four years of work for the bachelor's degree.

Millaps College, Jackson.
Mississippi College, Clinton.
Mississippi Industrial Institute and College, Columbus.

MISSOURI.

The University of Missouri is a member of the Missouri College Union and as such agrees to accept the credits of students obtained in the other colleges of the union. It also accepts their A. B. graduates for admission to the graduate school of the university, but not with the understanding that they may take the master's degree in one year. The length of time required for this depends upon the opportunities for specialization offered by the institution in the department in which the student has specialized and the advantage he has taken of the opportunities offered.

Membership in the union is determined by vote of the institutions already members. A committee appointed by the union inspects and reports on all colleges making application for membership, and the action of the union is based on this report.

Central College, Fayette.
Central Wesleyan College, Warrenton.
Drury College, Springfield.
Missouri Valley College, Marshall.
Park College, Parkville.
St. Louis University, St. Louis.

Tarkio College, Tarkio.
University of Missouri, Columbia.
Washington University, St. Louis.
Westminster College, Fulton.
William Jewell College, Liberty.

MONTANA.

The University of Montana publishes no list of accredited collegiate institutions. Credits are accepted at full value only from institutions recognized by the State universities of the respective States.

NEBRASKA.

The University of Nebraska publishes no list of accredited or approved collegiate institutions.

NEVADA.

The University of Nevada publishes no list of accredited colleges. It accepts the work of those universities and colleges which require 15 units for entrance and whose college work entitles them to be ranked among institutions of the first class.

NEW MEXICO.

The University of New Mexico has as yet no scheme for accrediting collegiate institutions. It allows full credit, however, for work done in a State university or an institution that is a member of the North Central Association of Colleges and Secondary Schools. Other cases it settles on their merits.

NORTH CAROLINA.

The University of North Carolina issues no list of accredited institutions of collegiate grade. As a rule applications for advanced standing are dealt with individually.

NORTH DAKOTA.

The University of North Dakota recognizes the work of the North Dakota Agricultural College and of Fargo College (both located at Fargo). Credit for credit is given in so far as the subjects covered fit in with the course elected by the student at the university.

The smaller colleges of the State have not been investigated by the university.

OHIO.

The Ohio State University was unable to furnish a list of approved institutions. At the time the bulletin went to press a committee appointed by the university was engaged in inspecting the colleges of the State with a view to preparing such a list, but the work had not proceeded far enough to enable the university to make a satisfactory report.

OKLAHOMA.

Recognition of collegiate institutions by the University of Oklahoma is based upon the requirement of four years of high-school work for admission; upon the maintenance of satisfactory educational standards for members of the faculty; upon the character of the courses offered; and upon the possession of facilities for giving these courses.

The university recognizes the work of the following institutions to the extent of admitting their students conditionally to such standing as the number of these courses and the amount of time spent on them will warrant. After the successful completion of one year of work of a rank corresponding with the standing to which the students have been admitted, the evaluation of their work is revised or made permanent.

Henry Kendall College, Tulsa.
Kingsaber College, Kingsaber.
Oklahoma Methodist University, Guthrie.

Oklahoma Agricultural and Mechanical College, Stillwater.
Phillips University, East End.

OREGON.

The University of Oregon admits the holders of the A. B. degree from the following institutions to graduate standing in the university:

Albany College, Albany.

McMinnville College, McMinnville.

Pacific University, Forest Grove.

Reed College, Portland.

Willamette University, Salem.

Holders of the A. B. degree from the following colleges are allowed senior standing in the university:

Pacific College, Newberg.

Philomath College, Philomath.

SOUTH CAROLINA.

The University of South Carolina accepts the work of the following institutions as far as it coincides with the work of the university. The case of each applicant for advanced standing is dealt with individually, and the student is allowed to enter the class that his attainments entitle him to.

Anderson College, Anderson.

Chicora College for Women, Columbia.

The Citadel, the Military College of South Carolina, Charleston.

Clemson Agricultural College, Clemson College.

Coker College for Women, Hartsville.

College of Charleston, Charleston.

Columbia College, Columbia.

Converse College, Spartanburg.

Erskine College, Due West.

Furman University, Greenville.

Greenville Female College, Greenville.

Limestone College, Gaffney.

Newberry College, Newberry.

Presbyterian College of South Carolina, Clinton.

Winthrop Normal and Industrial College, Rockhill.

Wofford College, Spartanburg.

Woman's College of Due West, Due West.

SOUTH DAKOTA.

The University of South Dakota publishes no list of accredited institutions. Each application for advanced standing is dealt with individually.

TENNESSEE.

The University of Tennessee publishes no list of accredited or recognized colleges. Applications for advanced standing are dealt with individually.

TEXAS.

Classification of the colleges of Texas was made July 7, 1916, and additions made September 1, 1916, by the classification committee appointed for this purpose by the college section of the Texas State Teachers' Association, the classification being made with respect to the standards adopted by the college section.

Colleges shall be grouped in four classes, as follows:

(1) Colleges of Class A Plus. This class includes institutions which meet *in full all* the criteria of a standard college as adopted by the college section of the Texas State Teachers' Association. Students from institutions that are in Class A Plus should receive hour-for-hour credit.

(2) Colleges of Class A. This class includes institutions which approximate the standards set for Class A Plus, but fall short of it in certain particulars. For example, a college which has but 6 separate departments, instead of 7, or is slightly short of the standard set for the library or laboratory equipment, or has one or two teachers having more than 20 hours of classroom work per week, would fall in this class. Students from institutions rated in Class A should receive a maximum of 13 session hours per year, or their work in specified departments may be discounted, as noted in the rating of the individual institution.

(3) Colleges of Class B. This class includes institutions which, while of collegiate character and standards, fall short in more important particulars of the standards set for Class A Plus. Students from institutions rated in Class B receive approximately three-fourths credit up to a maximum of 11 session hours per year, except in specific departments, as may be noted in the rating of the individual institution. (This means that a student who offers three years of work from a college of Class B would receive, at the most, 33 session hours, and would have to spend approximately two years in the new institution to get his degree; in short, it represents a differential of one year.)

(4) Colleges of Class C. This class includes institutions which, while organized and designated as colleges, appear to be in reality little better than secondary schools. Students from institutions of Class C should receive, in departments to be specifically designated in each case, approximately one-half credit up to a total maximum of $7\frac{1}{2}$ session hours per year.

Minimum requirements for a college:

1. Entrance requirements should not be less than 14 standard high-school units.

2. The completion of four years of work of 36 weeks each, with an average of not less than fifteen 60-minute recitations per week. During each year the student may not complete, as a rule, more than one-fourth of the requirements for graduation, except when making up conditions. Should the college have four quarters of 12 weeks each, then a student may graduate in less than four years. At least one year of actual residence work should be required of all students who enter with advanced standing.

3. The conferring of a multiplicity of degrees is to be discouraged. It is far better for a small institution to build up one good, strong degree.

4. There should be maintained at least seven separate departments in liberal arts and sciences, with not less than one professor devoting his whole time to each department.

5. The college should be separate from any academy or preparatory school to the extent of separate faculties and classes.

6. A faculty properly qualified shall consist entirely of graduates of standard colleges, and each head of a department shall hold at least a master's degree from a standard college or have attained eminent success as a teacher. Graduate study and training in research equivalent to that required for the Ph. D. degree are urgently recommended. In departments of education, in addition to the above requirements, teachers should have had successful experience in public-school work.

7. Heads of departments should not receive salaries less than those paid by standard institutions. The average salary paid to members of the faculty is a serious factor in determining the standing of any institution.

8. The number of hours of work given by each teacher will vary in the different departments. To determine this, the amount of preparation required for the class and the time needed for study to keep abreast of the subject,

together with the number of students, must be taken into account; but in no case shall more than 20 hours per week be required, 15 being recommended as a maximum.

9. The number of students in a recitation or laboratory class should be limited to 30. A smaller number is much to be desired.

10. There should be an annual income of at least \$20,000 from either or all of tuition fees, rent, or endowment. This does not include charges for board.

11. The library should contain, exclusive of public documents and periodical publications, 5,000 volumes bearing specifically upon the subjects taught.

12. The laboratory equipment should be sufficient to perform all of the experiments called for by the courses offered in the sciences—sufficiency to be measured by the value of the apparatus—which shall be in chemistry not less than \$2,500, in physics not less than \$3,500, in biology not less than \$2,500.

13. The location and construction of the buildings, the lighting, heating, and ventilation of the rooms, the nature of the laboratories, corridors, closets, water supply, school furniture, apparatus, and methods of cleaning shall be such as to insure hygienic conditions for both students and teachers.

14. The character of the curriculum, the efficiency of instruction, the scientific spirit, the standard for regular degrees, the conservatism in granting honorary degrees, and the tone of the institution shall also be factors in determining its standing.

15. The institution must be able to prepare its graduates to enter recognized schools as candidates for advanced degrees.

CLASS A PLUS.

Austin College, Sherman.
Baylor Female College, Belton.
Baylor University, Waco.
Daniel Baker College, Brownwood.
Howard Payne College, Brownwood.
Simmons College, Abilene.

Southwestern University, Georgetown.
Southern Methodist University, Dallas.
Texas Christian University, Fort Worth.
Texas Woman's College, Fort Worth.
Trinity University, Waxahachie.
University of Texas, Austin.

(Classes A, B, and C are vacant.)

UTAH.

No formal action in recognizing collegiate institutions has been taken by the University of Utah, but the work of the Utah Agricultural College, at Logan, and of Brigham Young University, at Provo, is accepted as standard by the university.

In the case of students applying for advanced standing from institutions outside the State whose reputation is not well known, the universities of the States from which the applicants come are consulted.

VERMONT.

The University of Vermont accepts the credentials of Middlebury College, Middlebury, giving substantially hour-for-hour credit. The work of Norwich University, Northfield, and of St. Michael's College, Winoochi, is given part credit.

Outside the State the university accepts the work of all institutions having membership in the New England College Entrance Certificate Board and of others maintaining equivalent entrance requirements. In the case of institutions whose work is not well known, the university seeks information from the nearest approved institutions.

VIRGINIA.

The University of Virginia does not have a list of accredited institutions. Applicants for a master's or doctor's degree coming from other institutions are admitted to candidacy for such degree at the university, provided the institution from which they received their baccalaureate degrees fulfill the following conditions:

(1) That they have a faculty of at least six professors giving their full time to college or university work; (2) entrance requirements equal to those of the University of Virginia, and (3) courses of four full years in liberal arts and sciences.

Students coming from institutions meeting the above conditions are not required to take any undergraduate courses except such as the committee on rules and courses or the professors in charge of the graduate courses they elect may consider necessary for the successful prosecution of those courses. If, however, the institution does not meet the three conditions, the candidate's preparation is carefully considered by the committee on rules and courses, which prescribes such undergraduate courses as are deemed necessary to supply his deficiencies.

WASHINGTON.

The University of Washington has prepared no list of accredited institutions. In admitting students to advanced standing the university uses as a general guide the tentative classification prepared by the Bureau of Education in 1911. The credits of students who have come from institutions concerning which the University of Washington has little or no definite information are usually submitted for evaluation to the State university or some well recognized institution in the State in which the colleges in question are located.

Following is the practice of the university in dealing with the colleges of the State:

College of Puget Sound, Tacoma.—Full credit allowed for all work done within the last four or five years.

Gonzaga College, Spokane.—Liberal arts credits have not been evaluated because students entering the university have gone into some of its professional schools.

Spokane College, Spokane.—Students accepted on probation for the past six years.

Whitman College, Walla Walla.—Credits accepted hour for hour.

Whitworth College, Spokane.—University unable to get complete records of students, due perhaps to recent removal of the institution to Spokane.

WEST VIRGINIA.

West Virginia University publishes no list of accredited institutions. Each case is dealt with on its merits. As regards institutions outside the State, the university grants all colleges that are in good standing with their own State university any privileges in the way of accrediting that is granted by the university of the State from which the student comes.

WISCONSIN.

Students of the State normal schools and of certain colleges of Wisconsin who have fully and satisfactorily covered the requirements of the first two years' work in the courses they desire to pursue at the university are admitted to junior rank in the college of letters and science of the university. In case of migration at an earlier period than the end of the sophomore year proportional credit is given. Formal inspection of the institutions by university representatives is made of the colleges before such privilege is granted.

Beloit College, Beloit.
 Carroll College, Waukesha.
 La Crosse State Normal School, La Crosse.
 Lawrence College, Appleton.
 Marquette University, Milwaukee.
 Milwaukee-Downer College, Milwaukee.
 Milwaukee German-American Seminary
 (provided the candidate majors in German), Milwaukee.
 Milwaukee State Normal School, Milwaukee.
 Oshkosh State Normal School, Oshkosh.

Platteville State Normal School, Platteville.
 Ripon College, Ripon.
 River Falls State Normal School, River Falls.
 St. Clara College and Academy, Sinsinawa.
 Stevens Point State Normal School, Stevens Point.
 Superior State Normal School, Superior.
 Whitewater State Normal School, Whitewater.

WYOMING.

The University of Wyoming has no formal list of accredited collegiate institutions. Each case of students transferring from other institutions is judged on its merits.

PART II.—INSTITUTIONS ACCREDITED BY STATE DEPARTMENTS OF EDUCATION.

ALABAMA.

For recognition by the Department of Education of Alabama, an institution must maintain four years of standard college work for graduation; must require for entrance the completion of four years of standard high-school work, with a minimum of 14 units; and must have a department for the professional training of teachers under the direction of a person specially trained in educational branches,¹ or of some professor at the head of a related department who shall before the beginning of the year pursue for a minimum of six weeks a course of professional study at some college or university which makes a specialty of teacher training. To graduates of such institutions, first-grade teachers' certificates are granted without examination.

Alabama:

Alabama Polytechnic Institute, Auburn.
Athens Female College, Athens.
Birmingham College, Birmingham.
Howard College, Birmingham.
Judson College, Marion.
Southern University, Greensboro.
University of Alabama, University.
Woman's College of Alabama, Montgomery.

District of Columbia: Howard University, Washington.

Florida: Florida State College for Women, Tallahassee.

Georgia:

Agnes Scott College, Decatur.
Georgia Normal and Industrial College, Milledgeville.
University of Georgia, Athens.

Illinois:

Northwestern University, Evanston.
University of Chicago, Chicago.
University of Illinois, Urbana.

Indiana:

Earlham College, Earlham.
Indiana University, Bloomington.
Valparaiso University, Valparaiso.

Iowa: Morningside College, Sioux City.

Kentucky: University of Kentucky, Lexington.

Louisiana: H. Sophie Newcomb Memorial College, New Orleans.

Maryland: Goucher College, Baltimore.

Michigan:

Hillsdale College, Hillsdale.

University of Michigan, Ann Arbor.

Minnesota: University of Minnesota, Minneapolis.

Mississippi: Industrial Institute and College, Columbus.

Missouri:

University of Missouri, Columbia.

Washington University, St. Louis.

New York: Columbia University, New York.

North Carolina: Trinity College, Durham.

Ohio: Denison University, Granville.

South Carolina: Winthrop Normal and Industrial College, Rock Hill.

Tennessee:

Cumberland University, Lebanon.

George Peabody College for Teachers, Nashville.

University of Tennessee, Knoxville.

Texas: Baylor University, Waco.

Virginia: Randolph-Macon Woman's College, Lynchburg.

Wisconsin: University of Wisconsin, Madison.

¹ The remainder of this provision refers to institutions in Alabama only.

ARIZONA.

Collegiate institutions accredited by the Arizona State Board of Education must prepare their graduates who may be applicants for first-grade teachers' certificates in the State of Arizona to meet the following conditions:

The applicant must have completed a full English classical or scientific course in which at least four years' work is required above an approved high-school course of four years; he must have taken at least one year's work in education, covering the subjects of pedagogy, history of education, school economy, and school government.

(The Bureau of Education was unable to obtain a list of the accredited institutions, as the list was undergoing revision at the time of the publication of this document.)

ARKANSAS.

Following is the practice of the Arkansas State Board of Education in granting licenses to teach to graduates of the higher institutions of the State:

No formal recognition further than to grant a charter has been given by the State board of education to any colleges of the State. A committee of the board has, however, been appointed to rate the work of the various colleges and to make regulations concerning the credit to be given to it in issuing licenses to teach and is now at work at it.

It has been the practice of the superintendent of public instruction to grant licenses to graduates of the colleges named below when the work done by the applicant in the college has covered the subjects named in the law defining the various grades of State-wide license. In all cases the applicant must have had six months of successful experience in teaching, and if he is an applicant for unlimited State license, he must have had at least one year of successful experience in teaching.

Arkansas Baptist College (colored), Little Rock.
Arkansas College, Batesville.
Arkansas Conference College, Siloam Springs.
Arkansas Cumberland College, Clarksville.
Central College, Conway.
Galloway College, Searcy.

Henderson-Brown College, Arkadelphia.
Hendrix College, Conway.
Little Rock College, Little Rock.
Ouachita College, Arkadelphia.
Philander Smith College (colored), Little Rock.
State Normal School, Conway.
University of Arkansas, Fayetteville.

CALIFORNIA.

To obtain the high-school teacher's certificate in California the applicant must have received a bachelor's degree from a standard college and have completed in addition one year of graduate study in an approved graduate school. Institutions which the State Board of Education of California approves as qualified to offer the prescribed graduate work must meet the following requirements:

1. For college matriculation the university applying for recognition must demand and enforce an entrance requirement of at least 15 units, as defined by the Carnegie foundation.

2. For admission to any bona fide graduate course for graduate students, not less than 24 undergraduate units in the same subject shall be required, of which at least 15 shall be advanced work, e. g., 24 units of undergraduate history, 15 of them taken in the junior or senior years.

3. Satisfactory evidence must be presented showing that the institution under consideration maintained at least one two-hour or three-hour graduate course in from 8 to 10 of the departments represented in the high schools of the State.

4. No professor conducting such a graduate course shall have more than a total of 12 hours per week of class exercises.

5. Satisfactory evidence must be presented showing that adequate provision exists for the professional training required by the State board, practice teaching being confined to the graduate year.

6. No recommendation for the high-school certificate to be issued except on the basis of proficiency in at least one of the subjects taught in high schools and the satisfactory completion of an academic nonprofessional graduate course.

7. Laboratory and library equipment must be adequate for the successful conduct of graduate work in at least 8 or 10 departments.

8. Satisfactory guaranties must be given that at least \$10,000 a year is being spent and will continue to be spent on salaries and equipment for the exclusive benefit of the graduate department.

9. The board reserves the right to examine into conditions from time to time and to determine whether the conditions agreed upon are complied with and whether the scholarship standard is and remains that of a modern progressive university.

No institution is placed on the approved list unless it is a member of the Association of American Universities or the Association of State Universities.

California:

Leland Stanford Junior University,
Stanford University.

University of California, Berkeley.

University of Southern California, Los Angeles.¹

Colorado: University of Colorado, Boulder.¹

Connecticut: Yale University, New Haven.

District of Columbia: Catholic University of America, Washington.

Illinois:

University of Chicago, Chicago.

University of Illinois, Urbana.

Indiana: Indiana University, Bloomington.

Iowa: State University of Iowa, Iowa City.

Kansas: University of Kansas, Lawrence.

Maryland: Johns Hopkins University, Baltimore.

Massachusetts:

Clark University, Worcester.

Harvard University, Cambridge.

Michigan: University of Michigan, Ann Arbor.

Minnesota: University of Minnesota, Minneapolis.

Missouri: University of Missouri, Columbia.

Nebraska: University of Nebraska, Lincoln.

New Jersey: Princeton University, Princeton.

New York:

Columbia University, New York City.

Cornell University, Ithaca.

Ohio: Ohio State University, Columbus.¹

Pennsylvania: University of Pennsylvania, Philadelphia.

Texas: University of Texas, Austin.¹

Virginia: University of Virginia, Charlottesville.

Washington: University of Washington, Seattle.¹

Wisconsin: University of Wisconsin, Madison.

¹ Accrediting not to extend to postgraduate work done prior to the academic year 1911-12.

COLORADO.

The State Board of Examiners of Colorado recognizes all colleges whose entrance requirements are graduation from a four-year high school and which maintain a standard four years' course of collegiate work including the following subjects: General and educational psychology, history of education, science and principles of education, practice teaching, organization and management of schools, philosophy, sociology, and anthropology.

Graduates from such recognized colleges located in the State of Colorado are entitled to temporary nonrenewable certificates which may be replaced by five-year State certificates after the holder has had 24 months of successful teaching experience. Graduates from standard colleges located outside of the State are required to have at least 24 months of teaching experience before they are entitled to a State certificate.

CONNECTICUT.

There is no machinery for accrediting colleges and universities in Connecticut.

DELAWARE.

To be recognized by the Delaware State Board of Education a college or university must have adequate academic and some professional work. The graduates of institutions so recognized may obtain a limited professional teacher's certificate.

Colorado: Colorado College, Colorado Springs.

Delaware:

Delaware College, Newark.

State College for Colored Students, Dover.

Kansas: Fairmount College, Wichita.

Maine: Bates College, Lewiston.

Maryland:

Goucher College, Baltimore.

Maryland College for Women, Lutherville.

Washington College, Chestertown.

Western Maryland College, Westminster.

Massachusetts: Wellesley College, Wellesley.

New York: Vassar College, Poughkeepsie.

Ohio: Oberlin College, Oberlin.

Rhode Island: Rhode Island State College, Kingston.

Pennsylvania:

Albright College, Myerstown.

Pennsylvania College, Gettysburg.

Pennsylvania State College, State College.

Swarthmore College, Swarthmore.

Ursinus College, Collegeville.

Wilson College, Chambersburg.

Vermont: Middlebury College, Middlebury.

Virginia: Randolph-Macon College, Ashland.

West Virginia: Storer College (colored), Harpers Ferry.

DISTRICT OF COLUMBIA.

The District of Columbia Board of Education accredits or approves no collegiate institutions.

FLORIDA.

Institutions are accredited by the Department of Public Instruction of Florida through inspection of their courses of study and their daily work. Graduates of the State college and of the State university receive State certificates without examination, on condition that their average grades, made in their junior and senior years, are not less than 85 per cent, with no grade below 60 per cent. Graduates of independent institutions may also receive State certificates without examination under the same law, if those institutions meet the requirements of the State board of education and the State board of control.

Columbia College, Lake City.

Florida State College for Women, Tallahassee.

John B. Stetson University, Deland.

Rollins College, Winter Park.

Southern College, Sutherland.

University of Florida, Gainesville.

GEORGIA.

The Department of Education of Georgia does not formally approve the colleges of the State. The following six institutions, however, have arranged their work so that their graduates are granted the professional college certificate, provided their courses have included three courses in education preparatory to teaching, supervision, and administration, these courses to be the equivalent of at least three hours a week each through a year. These are the minimum requirements of the State board of education, which also inspects the examinations and work generally.

Agnes Scott College, Decatur.

Emory University, Atlanta.

Mercer University, Macon.

North Georgia Agricultural College, Dahlonega.

University of Georgia, Athens.

Wesleyan Female College, Macon.

The following institutions have arranged their courses so that their graduates are granted the professional normal certificate:

Beale Tift College, Forsyth.

Brenau College, Gainesville.

La Grange Female College, La Grange.

Shorter College, Rome.

IDAHO.

Recognition is given by the Department of Education of Idaho to the work of the University of Idaho (at Moscow) and to the College of Idaho (at Caldwell). Graduates of these institutions who receive the degree of bachelor of arts or bachelor of science and the certificate of the head of the department of education of these institutions that they have completed the required work in that department, or in lieu of such certificate have taught successfully in the public schools of the State for a period of two years, may receive a State certificate from the State board of education. The basis for recognition is visitation of the institutions.

Institutions without the State recognized by the department of education are those which are accredited by the departments of education in the several States.

ILLINOIS.

For the purpose of certificating teachers the Department of Education of Illinois divides the higher institutions of the State into four groups, as follows:

GROUP I—RECOGNIZED NORMAL SCHOOLS.

DEFINITION.

A normal school is an institution whose organization, administration and instruction are determined by one controlling purpose; viz, the education of teachers for the public schools.

A recognized normal school is an institution employing at least 16 teachers, each of whom devotes more than half of his time to teaching students above the four-year high-school grade, and at least six teachers who devote their entire time to the training of teachers in a practice school.

It shall require for graduation two full years of normal school work or 24 term credits.

A term credit is the work done in a subject requiring not less than four 45-minute recitation periods per week for not less than 12 weeks.

A year of practice teaching shall include the equivalent of 45 minutes per day for 180 days spent in the actual teaching of pupils in a kindergarten, elementary, or high school under competent and close supervision.

The recognition of the Illinois State normal schools includes the recognition of their work as normal schools, teachers' colleges, and special schools.

Chicago Normal School, Chicago.
Eastern Illinois State Normal School,
Charleston.
Illinois State Normal University, Normal.
Northern Illinois State Normal School,
DeKalb.

Southern Illinois State Normal University,
Carbondale.
Western Illinois State Normal School,
Macomb.

GROUP II—RECOGNIZED COLLEGES AND UNIVERSITIES.

DEFINITION.

An institution to be ranked as a recognized college or university shall have at least six professors giving their entire time to college or university work, the necessary equipment to give a course of four full years of college grade in the liberal arts and sciences, and shall require for admission not less than 15 secondary units of preparation in a recognized four-year high school or its equivalent. It shall require for graduation not less than 120 semester hours.

Graduates of such institutions seeking county or State certificates are required to show credits of at least 3 semester hours in educational psychology and 3 semester hours in the principles and methods of teaching.

Full recognition of a college or university by the department of public instruction means that all its work relating to the preparation

of teachers will be accepted according to the provisions of the certifying law, and that such recognition extends to all departments of the institution.

The following list of recognized institutions was made upon the basis of information furnished by inquiries and investigations along the lines of—

1. The relationship of the college to the Federation of Illinois Colleges.
2. The relationship of the college to the North Central Association of Colleges and Secondary Schools.
3. The relationship of the college to graduate schools in universities.
4. Recognition given to graduates of the college by departments of education in other States.
5. The catalogues and publications of the college.
6. The answers submitted by the president or registrar to the questions contained in the blanks sent out by the superintendent of public instruction of Illinois.
7. A visit made by authorized inspectors.

Fully recognized institutions (April, 1917).

(Period of recognition two years.)

Armour Institute of Technology, Chicago.	Lombard College, Galesburg.
Augustana College, Rock Island.	Loyola University, Chicago.
Carthage College, Carthage.	Monmouth College, Monmouth.
De Paul University, Chicago.	Northwestern College, Naperville.
Eureka College, Eureka.	Northwestern University, Evanston.
Illinois College, Jacksonville.	Rockford College, Rockford.
Illinois Wesleyan University, Bloomington.	St. Viator College, Bourbonnais.
Illinois Woman's College, Jacksonville.	University of Chicago, Chicago.
James Millikin University, Decatur.	University of Illinois, Urbana.
Knox College, Galesburg.	Wheaton College, Wheaton.
Lake Forest College, Lake Forest.	

Institutions recognized for one year (April, 1917).

Institutions recognized for one year will be visited within the ensuing year. If the results of such visit are satisfactory, the institution will be immediately placed upon the fully recognized list.

Greenville College, Greenville.	McKendree College, Lebanon.
Hedding College, Abingdon.	Shurtleff College, Upper Alton.

GROUP III—PARTIALLY RECOGNIZED COLLEGES AND UNIVERSITIES.

(a) Higher institutions of learning offering four years of college work beyond high-school graduation, but failing to meet all the requirements for full recognition may, upon examination, be granted partial recognition. Certain courses or parts of courses may be recognized, and the students or graduates of such recognized courses may be accorded the privileges granted by law in proportion to the work actually done as compared with fully recognized colleges.

(b) Such partial recognition shall be granted for only one year at a time.

(c) Whenever, upon examination, it is found that a partially recognized institution has met all the requirements of a recognized college or university, it shall be transferred to Group II.

Aurora College, Aurora.	Mount Morris College, Mount Morris.
Blackburn College, Carlinville.	William and Vashti College, Albia.
Lincoln College, Lincoln.	

GROUP IV—RECOGNIZED JUNIOR COLLEGES AND TECHNICAL OR SPECIAL SCHOOLS.

1. *Recognized junior colleges.*—(For the definition and list of recognized junior colleges, see p. 73.)

2. *Recognized technical schools.*

An institution to be ranked as a technical or special school¹ must have at least four teachers giving their entire time to teaching technical or special subjects for two full years (80 semester hours of college grade), and shall require for admission not less than 15 secondary units of preparation in a recognized four-year high school or its equivalent.

Armour Institute of Technology, Chicago.
Bradley Polytechnic Institute, Peoria.

Lewis Institute, Chicago.

INDIANA.

A college to be rated as standard by the Department of Public Instruction of Indiana must meet the following requirements:

There must be five or more teachers devoting their time exclusively to college work; no teacher must be allowed to teach more than 25 hours per week (fewer than 20 per week are recommended); teachers in the departments of education must be graduates of standard normal schools, standard colleges, or universities doing graduate work; they must have had successful experience in public school work, and must be able to teach in a manner satisfactory to the State Teachers' Training Board.

There must be an endowment of not less than \$200,000 and an annual income, exclusive of tuition, of \$10,000.

The entrance requirements must be graduation from a commissioned high school or the equivalent.

The school year must consist of not less than 36 weeks; the recitation period must be at least 50 minutes; the course leading to the bachelor's degree must include four full years (144 weeks) of work beyond the entrance requirements.

The laboratory equipment must be adequate to meet the modern requirements of college work in the sciences attempted.

The library must be a growing library containing at least 5,000 volumes, exclusive of public documents. The educational department should have a good collection of educational and pedagogical books, and sets of the leading school journals and educational reports. The library must not be used for recitation purposes.

There must be a well-organized course for teachers requiring not less than one-fourth of the time of the student who is working for the bachelor's degree.

Butler College, Indianapolis.
DePauw University, Greencastle.
Earlham College, Earlham.
Franklin College, Franklin.
Hanover College, Hanover.

Indiana University, Bloomington.
Notre Dame University, Notre Dame.
Purdue University, Lafayette.
St. Mary's College, Notre Dame.
Wabash College, Crawfordsville.

¹ "Special" schools include schools of music, art, expression, etc., and are omitted.

IOWA.

Collegiate institutions accredited by the Iowa Department of Public Instruction must maintain the following standards. Graduates of accredited colleges receive first, second, or third grade State certificates, according to the course they have taken:

1. The number of class hours for the heads of departments shall not exceed 20 a week.
2. A faculty properly qualified shall consist of persons who have taken a master's degree in course in a recognized graduate school or have pursued graduate work in residence at least two years.
3. The library shall consist of at least 7,500 volumes, selected with reference to college subjects, and exclusive of public documents.
4. The laboratory equipment shall be adequate for doing work in a scientific way in the courses announced in the catalogue in botany, zoology, chemistry, physics, home economics, and agriculture.
5. The means of support is defined as requiring a permanent endowment of not less than \$200,000 or a fixed assured income, or its equivalent, exclusive of tuition, of at least \$10,000.
6. The college must maintain at least seven separate departments or chairs, and in case the pedagogical work of the institution is to be accepted without examination the college must maintain at least eight chairs, one of which shall be devoted exclusively to education or at most to philosophy, including psychology and education. The heads of at least five of these departments shall, in no case, devote less than three-fourths of their class hours to college work.
7. The graduates must in addition to the four-year college course show the completion of a four-year secondary course according to the standards established by the State board of education as entrance requirements to the collegiate courses of the institutions under the control of said board and the standing and character of the institution and the nature of its equipment and work must be such as to entitle its graduates to admission to the graduate college of the State University of Iowa.

Buena Vista College, Storm Lake.
Central University of Iowa, Pella.
Coe College, Cedar Rapids.
Cornell College, Mount Vernon.
Des Moines College, Des Moines.
Drake University, Des Moines.
Dubuque College, Dubuque.
Ellsworth College, Iowa Falls.
Grinnell College, Grinnell.
Highland Park College, Des Moines.
Iowa State College of Agriculture and Mechanic Arts, Ames.

Iowa State Teachers College, Cedar Falls.
Iowa Wesleyan College, Mount Pleasant.
Leander Clark College, Toledo.
Lenox College, Hopkinton.
Luther College, Decorah.
Morningside College, Sioux City.
Parsons College, Fairfield.
Penn College, Oskaloosa.
Simpson College, Indianola.
State University of Iowa, Iowa City.
Upper Iowa University, Fayette.

KANSAS.

Collegiate institutions must meet the following requirements in order to be approved by the Kansas Department of Education for the certification of their graduates for teaching positions:

1. The requirement for admission shall be 15 high-school units, selected from those listed and defined by the State board of education.
2. The requirement for graduation shall be the completion of a four-year course of at least 120 semester hours of 60 minutes, to include at least one year

in actual residence, and the other work to be done in a college conforming in effect to the requirements herein stated.

3. The institution must have at least seven professors. These professors shall give their entire time to work of college grade, and no professor should offer work in more than two departments of study. If in any of the colleges the instructors divide their time between collegiate and preparatory work, the total amount of collegiate work offered in any semester must not be less than 105 semester hours.

4. A faculty properly qualified shall consist of graduates of standard colleges who have pursued graduate work equivalent at least to that required for a master's degree. An exception as to graduate work may be made in the case of an instructor of successful experience and proved efficiency.

5. The number of class hours for instructors and students shall not exceed 20 a week.

6. The average salary of the full professors, exclusive of the salary of the president, shall be at least \$1,000.

7. The means of support shall be defined as requiring a permanent productive endowment of not less than \$200,000, or an annual income of not less than \$10,000, exclusive of tuition.

8. The laboratory equipment shall be worth not less than \$5,000, and shall be so distributed as to establish at least an efficient chemical, physical, and biological laboratory.

9. The library, exclusive of general reference books and public documents, shall contain at least 3,000 volumes. These volumes shall be of present value, selected with reference to the departments in which instruction is offered.

10. A maximum of 12 hours in Biblical literature and history may be allowed in the transcripts of graduates of colleges who are candidates for a State certificate.

11. The number of semester hours required of candidates for State certificates shall be 120. In this number shall be included the professional work and at least 20 hours of work in the subject that the candidate proposes to teach, together with at least 10 hours in a related subject.

12. The minimum in education shall be 18 hours in courses approved by the State board of education, of which at least 3 hours shall be in each of the following groups:

- (a) General psychology.
- (b) History of education.
- (c) Educational administration and supervision.
- (d) Educational psychology or theory of education.

The remaining six hours shall be selected from courses approved by the State board of education in any of the above groups. Until September 1, 1916, three hours additional will be accepted.

Institutions outside of Kansas which satisfy the board of education that they maintain efficient departments of education and meet the other requirements for schools on the approved list may have the privilege of certification extended to their graduates.

Baker University, Baldwin City.
Bethany College, Lindsborg.
Bethel College, Newton.
College of Emporia, Emporia.
Cooper College, Sterling.
Fairmount College, Wichita.
Friends University, Wichita.
Kansas State Agricultural College, Manhattan.

Kansas Wesleyan University, Salina.
McPherson College, McPherson.
Midland College, Atchison.
Ottawa University, Ottawa.
Southwestern College, Winfield.
University of Kansas, Lawrence.
Washburn College, Topeka.

KENTUCKY.

Seven colleges of standard rank in Kentucky are organized into what is known as the State College Association. The standards for membership in this association are: Six professors giving their entire time to regular college work; a regular income of not less than \$16,000 a year; a library adequate to the needs of the various departments, systematically catalogued; laboratory equipment sufficient for giving not less than two years' work in each of the elementary sciences; 15 standard units required for entrance; and for the baccalaureate degree completion of the regular four-year course, comprising not less than 120 semester hours, exclusive of physical training.

Graduates of these institutions, having completed a definite amount of work in the department of education, may be given a special high-school certificate by the State board of education in its discretion:

Berea College, Berea.

Central University of Kentucky, Danville.

Georgetown College, Georgetown.

Kentucky Wesleyan College, Winchester.

State University of Kentucky, Lexington.

Transylvania College, Lexington.

University of Louisville, Louisville.

LOUISIANA.

The State Department of Education of Louisiana approves the following higher institutions of the State for the certification of teachers of high schools and other public schools of the State:

H. Sophie Newcomb Memorial College,
New Orleans.

Louisiana State University and Agricultural and Mechanical College, Baton Rouge.

Tulane University of Louisiana, New Orleans.

MAINE.

There is no formal accrediting of institutions of collegiate rank by the State Superintendent of Public Schools of Maine.

MARYLAND.

Graduates of the following colleges in Maryland who have had 200 recitation hours in education may receive the high-school teachers' certificate. There is no definite basis for recognition of collegiate institutions in Maryland.

Goucher College, Baltimore.

Hood College, Frederick.

Johns Hopkins University, Baltimore.

Morgan College (colored), Baltimore.

Mount St. Agnes College, Mount Washington.

Mount St. Joseph's College, Baltimore.

St. John's College, Annapolis.

Washington College, Chestertown.

Western Maryland College, Westminster.

MASSACHUSETTS.

There is in Massachusetts no system of accrediting collegiate institutions. Graduates from the colleges of the State granting the bachelor's degrees and from other institutions of equal standing outside the State may receive a certificate to teach in the State-aided high schools. In considering applicants from institutions outside the State the board relies to some extent on the tentative list prepared by the Bureau of Education in 1911.

MICHIGAN.

Colleges in Michigan having a four-year course and giving a prescribed amount of work in pedagogy may be accredited by the Michigan Board of Education. Graduates of such colleges having completed the required work in pedagogy may be granted a four-year certificate, which may become a life certificate after three years of successful teaching.

Adrian College, Adrian.
Albion College, Albion.
Alma College, Alma.
Hillsdale College, Hillsdale.
Hope College, Holland.

Kalamazoo College, Kalamazoo.
Michigan Agricultural College, East Lansing.
Olivet College, Olivet.
University of Michigan, Ann Arbor.

MINNESOTA.

For the purpose of certification of teachers, the Department of Education of Minnesota recognizes any institution whose admission and graduation requirements are equivalent to those of the University of Minnesota and whose graduates have had the required amount of professional training.

MISSOURI.

Graduates of the institutions which are members of the Missouri College Union,¹ who have completed at least 18 hours' work in education, may receive a three-year State certificate, and after two years' successful experience in teaching the certificate may be made permanent.

Following are the members of the union (March, 1916):

Central College, Fayette.
Central Wesleyan College, Warrenton.
Drury College, Springfield.
Missouri Valley College, Marshall.
Park College, Parkville.
St. Louis University, St. Louis.

Tarkio College, Tarkio.
University of Missouri, Columbia.
Washington University, St. Louis.
Westminster College, Fulton.
William Jewell College, Liberty.

MONTANA.

The collegiate institutions of Montana accredited for the issuance of State teachers' certificates by the State board of education are the State institutions: Montana College of Agriculture and Mechanic Arts, Bozeman, and the University of Montana, Missoula.

¹ See p. 18.

Institutions outside the State accredited by the Montana State Board of Education are those recognized by the educational authorities in the several States for the purpose of certificating teachers. Such institutions must have a four years' course of study based on a four-year high-school course.

NEBRASKA.

The laws of Nebraska provide as follows:

When any college or university * * * in this State shall have a course of study equal in extent and similar in subjects to the higher course in the State normal schools, and shall have full and ample equipment and a faculty of instructors fully competent to give and are actually giving satisfactory instruction in the branches contained in said course and equivalent to that given in the State normal schools, the graduates of such course shall be granted by the board of trustees of the proper institution a first-grade State certificate of the same tenor and effect as the certificate to teach issued to the graduates from the higher course of the State normal schools.

To be entitled to this privilege institutions must meet the following requirements:

Such institutions shall be incorporated under the laws of the State of Nebraska.

The incorporation shall have at least \$50,000 invested or available for the use of the school.

The incorporation shall employ not fewer than five teachers who shall put in full time in giving instruction in the branches of study required to be taught by the provisions of the two next preceding sections.¹

The State superintendent of public instruction shall satisfy himself by personal inspection or by the personal inspection of the State board of examiners for life certificates that any institution desiring recognition under said sections has fully complied with the requirements set forth herein and in the two next preceding sections.¹

The entrance requirements to the elementary and higher courses and the time required for the completion of said courses shall be the same as in the State normal schools.

Each year the State superintendent of public instruction shall satisfy himself by personal inspection of the State board of examiners for life certificates that the requirements have been met before any certificate can be granted by such institution.

Bellevue College, Bellevue.
Cotner University, Bethany.
Creighton University, Omaha.
Dana College, Blair.
Doane College, Crete.
Grand Island College, Grand Island.
Hastings College, Hastings.

Nebraska Wesleyan University, University Place.
Union College, College View.
University of Nebraska, Lincoln.
University of Omaha, Omaha.
York College, York.

NEVADA.

All State universities and all universities and colleges having courses of study based upon a four-year high-school course and equiv-

¹ The section quoted at the beginning of this statement and another similar in its provisions.

alent to liberal arts and science courses at the University of Nevada, and 16 semester hours in education, are approved by the Department of Education of Nevada. To the graduates of institutions fulfilling these requirements State high-school certificates are issued.

NEW HAMPSHIRE.

The Department of Public Instruction of New Hampshire has made up no list of approved colleges. Applications for teachers' certificates are dealt with individually. If a teacher holds a diploma from some college remote and unknown, the department investigates its requirements.

NEW JERSEY.

Graduates of the following New Jersey institutions are exempted from such academic and professional work as meets the requirements of teachers' certificates and of "qualifying certificates" for the various professions. The recommendations for approval by the department of public instruction are made by a committee, the chairman of which is a member of the Rutgers College faculty.

College of Mount St. Mary, Plainfield.
College of St. Elizabeth, Convent Station.
Princeton University, Princeton.
Rutgers College, New Brunswick.
St. Benedict's College, Newark.

St. Peter's College, Jersey City.
Seton Hall College, South Orange.
Stevens Institute of Technology, Hoboken.
Upsala College, Kenilworth.

NEW MEXICO.

The Department of Education of New Mexico has no list of institutions which it approves for the certification of teachers. Each application is dealt with according to its merits. It is necessary, however, that the institution from which the applicant presents credits be an accredited institution in the State in which it is located.

NEW YORK.

At the time of the publication of this bulletin the list of institutions accredited by the Regents of the University of the State of New York was in the course of revision. No up-to-date list of institutions in other States than New York accredited by the regents could be obtained. The following are the colleges and universities located in the State of New York which are accredited by the regents:

An institution to be ranked as a college must have at least six professors giving their entire time to college or university work, a course of four full years of college grade in liberal arts and sciences, and should require for admission not less than the usual four years of academic or high school preparation, or its equivalent, in addition to the preacademic or grammar school studies.¹

¹ This list includes also institutions in Brazil, Turkey, and the Far East chartered by the New York Legislature or by the State Education Department of New York. In this bulletin, however, the names of all foreign institutions have been consistently omitted.

Adelphi College, Brooklyn.
 Alfred University, Alfred.
 Barnard College (Columbia University),
 New York.
 Canisius College, Buffalo.
 Colgate University, Hamilton.
 College of Mount St. Vincent, New York.
 College of New Rochelle, New Rochelle.
 College of St. Francis Xavier, Brooklyn.
 College of the City of New York, New York.
 Columbia University, New York.
 Cornell University, Ithaca.
 D'Youville College and Academy of the
 Holy Angels, Buffalo.
 Elmira College, Elmira.
 Fordham University, Fordham.
 Hamilton College, Clinton.
 Hobart College, Geneva.
 Hunter College of the City of New York,
 New York.

Manhattan College, New York.
 New York State College for Teachers,
 Albany.
 New York University, New York.
 Niagara University, Niagara University.
 St. Bonaventure's College, Allegany.
 St. Francis College, Brooklyn.
 St. John's College, Brooklyn.
 St. Joseph's Seminary and College, New
 York.
 St. Lawrence University, Canton.
 St. Stephen's College, Annandale.
 Syracuse University, Syracuse.
 Union University, Schenectady.
 University of Rochester, Rochester.
 Vassar College, Poughkeepsie.
 Wells College, Aurora.
 William College,¹ Geneva.

NORTH CAROLINA.

The following list of institutions approved by the State Department of Education of North Carolina (February, 1916), for the issuance to their graduates without examination of the high-school principal's and high-school teacher's certificates, was made after an inspection of each by an officer of the United States Bureau of Education. This inspection included an examination of the plant, with special reference to laboratory and library facilities, inquiry into the standards of admission and graduation, the financial support and prospects, the scope of the college work, etc.

A graduate of an institution in Group A may secure the high-school principal's certificate without examination, provided his academic and professional work are acceptable to the State board of examiners; a graduate of an institution in Group B may secure credit without examination toward the assistant high-school teacher's certificate on such academic and professional subjects as he has successfully pursued and which are acceptable to the State board of examiners.

GROUP A.

Davidson College, Davidson.
 Elon College,² Elon College.
 Guilford College,² Guilford College.
 Lenoir College,² Hickory.
 Meredith College, Raleigh.
 Salem Academy and College,² Winston-Salem.
 State Normal and Industrial College,
 Greensboro.
 Trinity College, Durham.
 University of North Carolina, Chapel Hill.
 Wake Forest College, Wake Forest.

GROUP B.

Atlantic Christian College, Wilson.
 Flora MacDonald College, Red Springs.
 Greensboro College for Women, Greensboro.
 North Carolina College of Agriculture and
 Engineering, West Raleigh.
 Peace Institute, Raleigh.
 Queens College, Charlotte.
 St. Genevieve's College, Asheville.
 St. Mary's School, Raleigh.
 Weaver College, Weaverville.

¹ Woman's department of Hobart College.

² Principal's academic credits not granted upon this basis to applicants who graduated from this institution prior to 1916.

NORTH DAKOTA.

The regulations concerning the certification of teachers by the State board of education provide:

The bachelor's diploma from institutions of recognized standing within or without the State will be accepted in lieu of examination as a basis for issuing a first-grade professional certificate for a period of two years, after its presentation to the board, provided that the diploma implies at least two year courses, or 16 semester hours of professional preparation for teaching.

The diploma or certificate from institutions whose curriculum is the equivalent of the four-year or five-year curriculum of the State normal schools will be accredited as a second-grade professional certificate for two years, provided that the diploma or certificate implies at least two-year courses, or 16 semester hours of professional preparation for teaching.

First-grade professional certificates have been issued [to March, 1916] to persons holding diplomas from higher institutions as shown below:

California: University of California, Berkeley.

Colorado: Colorado College, Colorado Springs.

District of Columbia: Trinity College, Washington.

Illinois:

Carthage College, Carthage.

Eureka College, Eureka.

Greenville College, Greenville.

Hedding College, Abingdon.

Illinois College, Jacksonville.

Knox College, Galesburg.

Lake Forest College, Lake Forest.

Monmouth College, Monmouth.

Northwestern University, Evanston.

University of Chicago, Chicago.

University of Illinois, Urbana.

Indiana: Indiana University, Bloomington.

Iowa:

Coe College, Cedar Rapids.

Cornell College, Mount Vernon.

Grinnell College, Grinnell.

Iowa State Teachers College, Cedar Falls.

Luther College, Decorah.

Morningside College, Sioux City.

Parsons College, Fairfield.

State University of Iowa, Iowa City.

Upper Iowa University, Fayette.

Kansas:

Baker University, Baldwin City.

Bethany College, Lindsborg.

Kentucky: University of Kentucky, Lexington.

Massachusetts:

Clark College, Worcester.

Radcliffe College, Cambridge.

Michigan: University of Michigan, Ann Arbor.

Minnesota:

Albert Lea College, Albert Lea.

Carleton College, Northfield.

Gustavus Adolphus College, St. Peter.

Hamline University, St. Paul.

Macalester College, St. Paul.

St. Olaf College, Northfield.

University of Minnesota, Minneapolis.

New York: Syracuse University, Syracuse.

North Dakota:

Fargo College, Fargo.

North Dakota Agricultural College, Agricultural College.

University of North Dakota, University.

Ohio:

Cedarville College, Cedarville.

Municipal University of Akron, Akron.

Muskingum College, New Concord.

Oberlin College, Oberlin.

Ohio Northern University, Ada.

Ohio State University, Columbus.

Ohio Wesleyan University, Delaware.

Oklahoma: Kingfisher College, Kingfisher.

Oregon: University of Oregon, Eugene.

Pennsylvania:

Dickinson College, Carlisle.

Franklin and Marshall College, Lancaster.

Grove City College, Grove City.

South Dakota:

Dakota Wesleyan University, Mitchell.

South Dakota State College of Agriculture and Mechanic Arts, Brookings.

University of South Dakota, Vermillion.

Tennessee: Maryville College, Maryville.

Wisconsin:

Ripon College, Ripon.

University of Wisconsin, Madison.

Second-grade professional certificates have been issued [to March, 1916] to persons holding diplomas from higher institutions as shown below:

Colorado: State Teachers College of Colorado, Greeley.

Illinois:

Chicago Teachers' College, Chicago.
Northern Illinois State Normal School, De Kalb.
Northwestern University, Evanston.
Western Illinois State Normal School, Macomb.

Indiana:

Central Normal College, Danville.
Indiana State Normal School, Terre Haute.
Valparaiso University, Valparaiso.
Wabash College, Crawfordsville.

Iowa:

Drake University, Des Moines.
Grinnell College, Grinnell.
Highland Park College, Des Moines.
Iowa State Teachers College, Cedar Falls.
Upper Iowa University, Fayette.

Kansas:

Emporia State Normal School, Emporia.
McPherson College, McPherson.

Michigan:

Central State Normal School, Mount Pleasant.
Kindergarten Training School, Grand Rapids.
Michigan State Normal College, Ypsilanti.
Northern State Normal School, Marquette.

Minnesota:

Augsburg Seminary, Minneapolis.
Duluth State Normal School.
Mankato State Normal School.
Moorhead State Normal School.
Red Wing Seminary, Red Wing.
St. Cloud State Normal School.
Stanley Hall, Minneapolis.
Winona State Normal School.

Missouri:

Cape Girardeau State Normal School.
Maryville State Normal School.
Warrensburg State Normal School.

Nebraska: Nebraska Wesleyan University, University Place.

New York:

Brockport State Normal and Training School.
Potsdam State Normal and Training School.

North Dakota:

Maryville State Normal School.
North Dakota Agricultural College, Agricultural College.
North Dakota State Normal and Industrial School, Ellendale.
State School of Science, Wahpeton.
Teachers' College, University of North Dakota, University.
Valley City State Normal School.

Oregon: Monmouth State Normal School.

Pennsylvania: Bloomsburg State Normal School.

South Dakota:

Dakota Wesleyan University, Mitchell.
Madison State Normal School.
Northern Normal and Industrial School, Aberdeen.
Redfield College, Redfield.
Springfield State Normal School.
University of South Dakota, Vermillion.

Washington:

Bellingham State Normal School.
Ellensburg State Normal School.

Wisconsin:

Catholic Normal School, St. Francis.
La Crosse State Normal School.
Milwaukee State Normal School.
Oshkosh State Normal School.
River Falls State Normal School.
Stevens Point State Normal School.
Superior State Normal School.
Whitewater State Normal School.

OHIO.

The requirements which colleges and universities must meet in order to be approved by the Ohio Department of Public Instruction for the certification of their graduates to high-school teachers' positions are as follows:

They must require for admission graduation from a first-grade high school, or its equivalent; 30 semester hours of professional training;¹ 3 semester hours for practice teaching and observation; not

¹ Several of the institutions in the accompanying list do not regularly offer 30 semester hours of professional work. Their graduates may, however, secure the requisite number of hours by work in some other institution.

less than 12 semester hours distributed among the following subjects, with not less than 2 semester hours in each subject: History of education, science of education, or principles of education; methods of teaching, general and special; school organization, including school management, classroom management, and school laws; psychology—general psychology, educational psychology, paidology.

The number of semester hours in any of the above courses may be increased, and, if the total does not reach 30, the remaining semester hours may be chosen from the fields of experimental psychology, sociology, ethics, and philosophy.

In addition to the above requirements, the institutions must have adequate corps of competent instructors, and the buildings, equipment, and libraries must be such as will enable a student to do creditable work.

Antioch College, Yellow Springs.
Baldwin-Wallace College, Berea.
Bluffton College, Bluffton.
Bowling Green State Normal College,
Bowling Green.
Capital University, Columbus.
Cedarville College, Cedarville.
College of Wooster, Wooster.
Defiance College, Defiance.
Denison University, Granville.
Findlay College, Findlay.
Heidelberg University, Tiffin.
Hiram College, Hiram.
Kent State Normal College, Kent.
Lake Erie College, Painesville.
Marietta College, Marietta.
Miami University, Oxford.

Mount Union College, Alliance.
Municipal University of Akron, Akron.
Muskingum College, New Concord.
Oberlin College, Oberlin.
Ohio University, Athens.
Ohio Northern University, Ada.
Ohio State University, Columbus.
Ohio Wesleyan University, Delaware.
Otterbein University, Westerville.
Oxford College for Women, Oxford.
Toledo University, Toledo.
University of Cincinnati, Cincinnati.
Western College for Women, Oxford.
Western Reserve University, Cleveland.
Wilmington College, Wilmington.
Wittenberg College, Springfield.

OKLAHOMA.

The requirements of the State Board of Education of Oklahoma for State certificates upon credentials to teach in the high schools of the State provide:

An accredited college or university whose graduates are entitled to State certificates to teach in Oklahoma high schools must be an institution of higher learning recognized as a standard college of liberal arts, requiring the completion of a four-year secondary course above the eighth grade for entrance and maintaining a four-year course thereafter for graduation, with a faculty properly qualified and possessing adequate equipment and means of support and maintaining at least seven separate departments or chairs. In case the pedagogical work of the institution is to be accepted without examination, the college must maintain at least eight chairs, one of which must be devoted exclusively to education or at most to psychology and education and shall maintain a pedagogical library having standard works and periodicals on psychology and education. The minimum amount of pedagogical work in any fully accredited college which will be accepted by the State board of education shall be equivalent to the requirements for the teacher's diploma of the University of Oklahoma.

An accredited normal school or teachers' college shall meet the following requirements:

(a) There must be five or more teachers who shall be graduates of standard normal schools, standard colleges or universities doing graduate work, devoting their time exclusively to the work of the normal courses.

(b) For entrance, four years' work above the eighth grade in an approved four-year high school or its undoubted equivalent.

(c) For graduation therefrom, a minimum requirement of two years' additional work, including a thorough review of the common branches and training in the practice school.

(d) The maintenance of a well-equipped training school for observation and practice, such school to cover work in the eight elementary grades; adequate laboratory facilities for teaching the various sciences offered; a library of at least 2,500 volumes, rich in standard books on educational subjects, educational reports and journals.

Arizona:

Northern Arizona Normal School, Flagstaff.
Tempe Normal School of Arizona, Tempe.
University of Arizona, Tucson.

Arkansas:

Ouachita College, Arkadelphia.
University of Arkansas, Fayetteville.

California:

Chico State Normal School.
Leland Stanford Junior University, Stanford University.
Los Angeles State Normal School.
San Diego State Normal School.
San Francisco State Normal School.
San Jose State Normal School.
University of California, Berkeley.

Colorado:

Colorado Agricultural College, Fort Collins.
Colorado College, Colorado Springs.
State School of Mines, Golden.
State Teachers College of Colorado, Greeley.
University of Colorado, Boulder.
University of Denver, University Park.

Connecticut:

New Britain State Normal Training School.
Willimantic State Normal School.
Yale University, New Haven.

Florida:

John B. Stetson University, Deland.
University of Florida, Gainesville.

Georgia:

Athens State Normal School.
University of Georgia, Athens.

Idaho:

Albion State Normal School.
Lewiston State Normal School.
University of Idaho, Moscow.

Illinois: University of Illinois, Urbana.

Indiana:

Indiana State Normal School, Terre Haute.
Indiana University, Bloomington.
Valparaiso University, Valparaiso.

Iowa:

Cornell College, Mount Vernon.
Des Moines College, Des Moines.
Drake University, Des Moines.
Highland Park College, Des Moines.
Iowa State College of Agriculture and Mechanic Arts, Ames.
Simpson College, Indianola.
Tabor College, Tabor.
Upper Iowa University, Fayette.

Kansas:

Baker University, Baldwin City.
Emporia State Normal School.
Kansas State Agricultural College, Manhattan.
Ottawa University, Ottawa.
University of Kansas, Lawrence.
Washburn College, Topeka.

Kentucky:

Eastern Kentucky State Normal School, Richmond.
Georgetown College, Georgetown.
University of Kentucky, Lexington.
Western Kentucky State Normal School, Bowling Green.

Louisiana:

Louisiana State Normal School, Natchitoches.
Louisiana State University and Agricultural and Mechanical College, Baton Rouge.
Tulane University of Louisiana, New Orleans.

Maine:

Bowdoin College, Brunswick.
Colby College, Waterville.
Eastern State Normal School, Castine.
Farmington State Normal School.
University of Maine, Orono.
Western State Normal School, Gorham.

Maryland:

Baltimore Teachers Training School.
Johns Hopkins University, Baltimore.
Maryland College for Women, Lutherville.
Maryland State Normal School, Frostburg.
Washington College, Chestertown.

Massachusetts :

Bridgewater State Normal School.
 Fitchburg State Normal School.
 Framingham State Normal School.
 Harvard University, Cambridge.
 Hyannis State Normal School.
 Lowell State Normal School.
 North Adams State Normal School.
 Salem State Normal School.
 Tufts College, Tufts College.
 Westfield State Normal School.
 Worcester State Normal School.

Michigan :

Central State Normal School, Mount Pleasant.
 Michigan State Normal College, Ypsilanti.
 Northern State Normal School, Marquette.
 University of Michigan, Ann Arbor.

Minnesota :

Mankato State Normal School.
 Moorhead State Normal School.
 St. Cloud State Normal School.
 University of Minnesota, Minneapolis.
 Winona State Normal School.

Mississippi :

Mississippi Agricultural and Mechanical College, Agricultural College.
 University of Mississippi, University.

Missouri :

Cape Girardeau State Normal School.
 Drury College, Springfield.
 Kirksville State Normal School.
 Maryville State Normal School.
 Missouri Valley College, Marshall.
 Park College, Parkville.
 St. Louis University, St. Louis.
 Springfield State Normal School.
 Tarkio College, Tarkio.
 University of Missouri, Columbia.
 Warrensburg State Normal School.
 Washington University, St. Louis.
 William Jewell College, Liberty.

Nebraska :

Bellevue College, Bellevue.
 Cotner University, Bethany.
 Creighton University, Omaha.
 Doane College, Crete.
 Nebraska Wesleyan University, University Place.
 Union College, College View.
 University of Nebraska, Lincoln.

Nevada : University of Nevada, Reno.**New Hampshire :**

Dartmouth College, Hanover.
 New Hampshire College of Agriculture and Mechanic Arts, Durham.

New Mexico :

New Mexico Normal School, East Las Vegas.
 New Mexico Normal School, Silver City.
 University of New Mexico, Albuquerque.

North Carolina :

State Normal and Industrial College, Greensboro.
 University of North Carolina, Chapel Hill.

North Dakota :

Fargo College, Fargo.
 Mayville State Normal School.
 North Dakota Agricultural College, Agricultural College.
 University of North Dakota, University.
 Valley City State Normal School.

Ohio :

Case School of Applied Science, Cleveland.
 Oberlin College, Oberlin.
 Ohio Northern University, Ada.
 Ohio State University, Columbus.
 Ohio Wesleyan University, Delaware.
 University of Cincinnati, Cincinnati.
 Western Reserve University, Cleveland.

Oklahoma :

Central State Normal School, Edmond.
 East Central State Normal School, Ada.
 Henry Kendall College, Tulsa.
 Kingfisher College, Kingfisher.
 Methodist University of Oklahoma, Guthrie.
 Northeastern State Normal School, Tahlequah.
 Northwestern State Normal School, Alva.
 Oklahoma Agricultural and Mechanical College, Stillwater.
 Oklahoma College for Women, Chickasha.
 Phillips University, East End.
 Southeastern State Normal School, Durant.
 Southwestern State Normal School, Weatherford.
 University of Oklahoma, Norman.

Oregon :

Oregon Agricultural College, Corvallis.
 University of Oregon, Eugene.
 Willamette University, Salem.

Pennsylvania :

Bloomsburg State Normal School.
 Bryn Mawr College, Bryn Mawr.
 Central State Normal School, Lock Haven.
 Clarion State Normal School.
 Cumberland Valley State Normal School, Shippensburg.
 Dickinson College, Carlisle.
 East Stroudsburg State Normal School.
 Edinboro State Normal School.
 Indiana State Normal School.
 Keystone State Normal School, Kutztown.
 Lehigh University, South Bethlehem.
 Mansfield State Normal School.
 Millersville State Normal School.

Pennsylvania—Continued.

Pennsylvania College, Gettysburg.
 Pennsylvania State College, State College.
 Slippery Rock State Normal School.
 Southwestern State Normal School, California.
 Swarthmore College, Swarthmore.
 University of Pennsylvania, Philadelphia.
 University of Pittsburgh, Pittsburgh.
 Washington and Jefferson College, Washington.
 West Chester State Normal School.

Rhode Island: Brown University, Providence.

Texas:

Agricultural and Mechanical College of Texas, College Station.
 Baylor University, Waco.
 North Texas State Normal College, Denton.
 Prairie View State Normal School (colored).
 Sam Houston State Normal Institute, Huntsville.
 Southwest Texas State Normal School, San Marcos.
 Texas Christian University, Fort Worth.
 Trinity College, Waxahachie.
 University of Texas, Austin.
 West Texas State Normal College, Canyon City.

Utah:

Agricultural College of Utah, Logan.
 University of Utah, Salt Lake City.

Vermont:

Middlebury College, Middlebury.
 Norwich University, Northfield.
 University of Vermont and State Agricultural College, Burlington.

Virginia:

College of William and Mary, Williamsburg.
 Emory and Henry College, Emory.
 Randolph-Macon College, Ashland.
 University of Virginia, Charlottesville.
 Washington and Lee University, Lexington.

Washington:

Bellingham State Normal School.
 Ellensburg State Normal School.
 University of Washington, Seattle.

Wisconsin:

Beloit College, Beloit.
 Carroll College, Waukesha.
 La Crosse State Normal School.
 Lawrence College, Appleton.
 Milwaukee State Normal School.
 Oshkosh State Normal School.
 Platteville State Normal School.
 Ripon College, Ripon.
 River Falls State Normal School.
 Stevens Point State Normal School.
 Stout Institute, Menomonie.
 Superior State Normal School.
 University of Wisconsin, Madison.
 Whitewater State Normal School.

Wyoming: University of Wyoming, Laramie.

OREGON.

To be recognized as standard by the Oregon State Education Department, for the purpose of issuing certificates to teach in the high schools of the State, institutions must meet the following conditions:

1. The completion of a four-year secondary course above the eighth grade shall be required for entrance.
2. The completion of 120 semester hours shall be required for graduation.
3. The number of class hours for the heads of departments or for students shall not exceed 20 a week.
4. A faculty properly qualified shall consist entirely of graduates of standard colleges, and each head of a department shall hold at least a master's degree from a standard college or have attained eminent success as a teacher, which success shall be determined by the chief State school officer of the State in which the institution is situated.
5. The library shall consist of at least 5,000 volumes, selected with reference to college subjects and exclusive of public documents.
6. The laboratory equipment shall be sufficient to establish efficient laboratories in all laboratory courses offered.

7. The college must maintain at least seven separate departments or chairs in the arts and sciences. In case the pedagogical work of the institution is to be accepted for certification, the college must maintain at least eight chairs, one of which shall be devoted exclusively to education, or at least to philosophy, including psychology and education. The head of each department shall, in no case, devote less than three-fourths of his time to college work.

As a basis for this list we used Class I and Class II of "A Classification of Universities and Colleges with Reference to Bachelor's Degrees," by Kendrick Charles Babcock, together with a list prepared by the North Central Association of Colleges. (Letter of State Supt. J. A. Churchill, Mar. 13, 1916.)

Alabama: University of Alabama, University.

Arizona: University of Arizona, Tucson.

California:

Leland Stanford Junior University, Stanford University.

Mills College, Mills College.

Occidental College, Los Angeles.

Pomona College, Claremont.

University of California, Berkeley.

University of Southern California, Los Angeles.

Colorado:

Colorado Agricultural College, Fort Collins.

Colorado College, Colorado Springs.

Colorado School of Mines, Golden.

University of Colorado, Boulder.

University of Denver, University Park.

Connecticut:

Sheffield Scientific School, New Haven.

Trinity College, Hartford.

Wesleyan University, Middletown.

Yale University, New Haven.

District of Columbia:

Catholic University of America, Washington.

George Washington University, Washington.

Georgetown University, Washington.

Florida: John B. Stetson University, Deland.

Georgia:

Agnes Scott College, Decatur.

Emory College, Oxford.

University of Georgia, Athens.

Idaho: University of Idaho, Moscow.

Illinois:

Armour Institute of Technology, Chicago.

Augustana College, Rock Island.

Bradley Polytechnic Institute (Junior College), Peoria.

Illinois College, Jacksonville.

Illinois Woman's College, Jacksonville.

James Millikin University, Decatur.

Knox College, Galesburg.

Lake Forest College, Lake Forest.

Lewis Institute (Junior College), Chicago.

Lombard College, Galesburg.

Monmouth College, Monmouth.

Illinois—Continued.

Northwestern College, Naperville.

Northwestern University, Evanston.

Rockford College, Rockford.

University of Chicago, Chicago.

University of Illinois, Urbana.

Indiana:

Butler College, Indianapolis.

De Pauw University, Greencastle.

Earlham College, Earlham.

Franklin College, Franklin.

Hanover College, Hanover.

Indiana University, Bloomington.

Purdue University, La Fayette.

Rose Polytechnic Institute, Terre Haute.

University of Notre Dame, Notre Dame.

Wabash College, Crawfordsville.

Iowa:

Central University of Iowa, Pella.

Coe College, Cedar Rapids.

Cornell College, Mount Vernon.

Des Moines College, Des Moines.

Drake University, Des Moines.

Grinnell College, Grinnell.

Iowa State College of Agriculture and Mechanic Arts, Ames.

Luther College, Decorah.

Morningside College, Sioux City.

Parsons College, Fairfield.

Penn College, Oskaloosa.

Simpson College, Indianola.

State University of Iowa, Iowa City.

Kansas:

Baker University, Baldwin City.

Bethany College, Lindsborg.

College of Emporia, Emporia.

Fairmount College, Wichita.

Ottawa University, Ottawa.

University of Kansas, Lawrence.

Washburn College, Topeka.

Kentucky:

Central University, Danville.

Georgetown College, Georgetown.

State University of Kentucky, Lexington.

Louisiana: Tulane University of Louisiana, New Orleans.

Maine:

Bates College, Lewiston.

Bowdoin College, Brunswick.

Colby College, Waterville.

University of Maine, Orono.

Maryland :

Goucher College, Baltimore.
 Johns Hopkins University, Baltimore.
 St. John's College, Annapolis.
 Western Maryland College, Westminster.

Massachusetts :

Amherst College, Amherst.
 Boston College, Boston.
 Boston University, Boston.
 Clark College, Worcester.
 College of the Holy Cross, Worcester.
 Harvard University, Cambridge.
 Massachusetts Agricultural College, Amherst.
 Massachusetts Institute of Technology, Cambridge.
 Mount Holyoke College, South Hadley.
 Radcliffe College, Cambridge.
 Smith College, Northampton.
 Tufts College, Tufts College.
 Wellesley College, Wellesley.
 Williams College, Williamstown.
 Worcester Polytechnic Institute, Worcester.

Michigan :

Albion College, Albion.
 Alma College, Alma.
 Hillsdale College, Hillsdale.
 Hope College, Holland.
 Kalamazoo College, Kalamazoo.
 Olivet College, Olivet.
 University of Detroit, Detroit.
 University of Michigan, Ann Arbor.

Minnesota :

Carleton College, Northfield.
 Gustavus Adolphus College, St. Peter.
 Hamline University, St. Paul.
 Macalester College, St. Paul.
 St. Olaf College, Northfield.
 University of Minnesota, Minneapolis.

Missouri :

Central College, Fayetteville.
 Drury College, Springfield.
 Missouri Valley College, Marshall.
 Park College, Parkville.
 Tarkio College, Tarkio.
 University of Missouri, Columbia.
 Washington University, St. Louis.
 William Jewell College, Liberty.

Montana : University of Montana, Missoula.**Nebraska :**

Doane College, Crete.
 Nebraska Wesleyan University, University Place.

University of Nebraska, Lincoln.

Nevada : University of Nevada, Reno.**New Hampshire :**

Dartmouth College, Hanover.
 New Hampshire College of Agriculture and Mechanic Arts, Durham.

New Jersey :

Princeton University, Princeton.
 Rutgers College, New Brunswick.
 Stevens Institute of Technology, Hoboken.

New Mexico : New Mexico College of Agriculture and Mechanic Arts, State College.**New York :**

Adelphi College, Brooklyn.
 Alfred University, New York.
 Barnard College, New York.
 Brooklyn Polytechnic Institute, Brooklyn.
 Colgate University, Hamilton.
 College of the City of New York, New York.
 Columbia University, New York.
 Cornell University, Ithaca.
 Elmira College, Elmira.
 Hamilton College, Clinton.
 Hobart College, Geneva.
 Manhattan College, New York.
 New York University, New York.
 Rensselaer Polytechnic Institute, Troy.
 St. Lawrence College, Canton.
 Syracuse University, Syracuse.
 University of Rochester, Rochester.
 Vassar College, Poughkeepsie.
 Wells College, Aurora.

North Carolina :

Davidson College, Davidson.
 Trinity College, Durham.
 University of North Carolina, Chapel Hill.
 Wake Forest College, Wake Forest.

North Dakota :

Fargo College, Fargo.
 University of North Dakota, University.

Ohio :

Case School of Applied Science, Cleveland.
 College of Wooster, Wooster.
 Denison University, Granville.
 Heidelberg University, Tiffin.
 Hiram College, Hiram.
 Kenyon College, Gambier.
 Lake Erie College, Painesville.
 Marietta College, Marietta.
 Miami University, Oxford.
 Mount Union College, Alliance.
 Municipal University of Akron, Akron.
 Oberlin College, Oberlin.
 Ohio State University, Columbus.
 Ohio University, Athens.
 Ohio Wesleyan University, Delaware.
 Otterbein University, Westerville.
 University of Cincinnati, Cincinnati.
 Western College for Women, Oxford.
 Western Reserve University, Cleveland.

Oklahoma : University of Oklahoma, Norman.**Oregon :**

Albany College, Albany.
 McMinnville College, McMinnville.
 Oregon Agricultural College, Corvallis.
 Pacific University, Forest Grove.
 Reed College, Portland.
 University of Oregon, Eugene.
 Willamette University, Salem.

Pennsylvania :

Allegheny College, Meadville.
 Bryn Mawr College, Bryn Mawr.
 Bucknell University, Lewisburg.
 Dickinson College, Carlisle.

Pennsylvania—Continued.

Franklin and Marshall College, Lancaster.
 Haverford College, Haverford.
 Lafayette College, Easton.
 Lebanon Valley College, Annville.
 Lehigh University, South Bethlehem.
 Muhlenberg College, Allentown.
 Pennsylvania College, Gettysburg.
 Pennsylvania State College, State College.
 Swarthmore College, Swarthmore.
 Temple University, Philadelphia.
 University of Pennsylvania, Philadelphia.
 University of Pittsburgh, Pittsburgh.
 Ursinus College, Collegeville.
 Washington and Jefferson College, Washington.
 Wilson College, Chambersburg.
 Rhode Island: Brown University, Providence.
 South Carolina: Wofford College, Spartanburg.
 South Dakota:
 University of South Dakota, Vermillion.
 Yankton College, Yankton.
 Tennessee:
 Union University, Jackson.
 University of Tennessee, Knoxville.
 University of the South, Sewanee.
 Vanderbilt University, Nashville.

Texas:

Baylor University, Waco.
 Southwestern University, Georgetown.
 Trinity University, Waxahachie.
 University of Texas, Austin.

Utah: University of Utah, Salt Lake City.
 Vermont:

Middlebury College, Middlebury.
 University of Vermont, Burlington.

Virginia:

Randolph-Macon College, Ashland.
 Randolph-Macon Woman's College, Lynchburg.
 Roanoke College, Salem.
 University of Virginia, Charlottesville.
 Washington and Lee University, Lexington.

Washington:

University of Washington, Seattle.
 Whitman College, Walla Walla.

West Virginia: West Virginia University, Morgantown.

Wisconsin:

Beloit College, Beloit.
 Carroll College, Waukesha.
 Lawrence College, Appleton.
 Milwaukee-Downer College, Milwaukee.
 Ripon College, Ripon.
 University of Wisconsin, Madison.

Wyoming: University of Wyoming, Laramie.

PENNSYLVANIA.

A list of the institutions recognized by the College and University Council of Pennsylvania is given below.

The basis of recognition is the maintenance of proper entrance conditions, a four-year college course prior to graduation and a statement of assets, faculty employed, and courses of study offered. Graduates of these colleges, if they had 200 hours of pedagogical work during their college course, obtain our college provisional certificate good for three years' teaching. After they have successfully taught for three years in the public schools they receive a life certificate. (Letter of State Supt. N. C. Schaeffer, Mar. 14, 1916.)

Albright College, Myerstown.
 Allegheny College, Meadville.
 Beaver College, Beaver.
 Bryn Mawr College, Bryn Mawr.
 Bucknell University, Lewisburg.
 Carnegie Institute of Technology, Pittsburgh.
 Duquesne University, Pittsburgh.
 Dickinson College, Carlisle.
 Drexel Institute, Philadelphia.
 Franklin and Marshall College, Lancaster.
 Geneva College, Beaver Falls.
 Grove City College, Grove City.
 Haverford College, Haverford.
 Irving College, Mechanicsburg.
 Juniata College, Huntingdon.
 Lafayette College, Easton.
 La Salle College, Philadelphia.
 Lebanon Valley College, Annville.
 Lehigh University, South Bethlehem.
 Lincoln University, Lincoln University.
 Moravian College, Bethlehem.

Moravian College for Women, Bethlehem.
 Muhlenberg College, Allentown.
 Pennsylvania College, Gettysburg.
 Pennsylvania College for Women, Pittsburgh.
 Pennsylvania Military College, Chester.
 Pennsylvania State College, State College.
 St. Joseph's College, Philadelphia.
 St. Vincent College, Beatty.
 Susquehanna University, Selinsgrove.
 Swarthmore College, Swarthmore.
 Temple University, Philadelphia.
 Thiel College, Greenville.
 University of Pennsylvania, Philadelphia.
 University of Pittsburgh, Pittsburgh.
 Ursinus College, Collegeville.
 Washington and Jefferson College, Washington.
 Waynesburg College, Waynesburg.
 Westminster College, New Wilmington.
 Wilson College, Chambersburg.

RHODE ISLAND.

The State board of education has no exclusive list of accredited, accepted, approved, or recognized colleges.

Colleges are accredited, accepted, approved, or recognized by the board of education only for the purpose of qualifying college graduates for certification as teachers, and no reputable college or university maintaining a four-year course for its first degree has been discriminated against in Rhode Island. A college diploma is accepted by the State board of education as evidence of academic education. (Letter of Walter E. Ranger, secretary of Rhode Island State Board of Education, April 13, 1916.)

SOUTH CAROLINA.

For the purpose of licensing teachers, the Board of Education of South Carolina has approved the following higher institutions of the State. "The basis (for approval) is not clearly defined by the State board, but credit is given after examination and approval of the curriculum, equipment, and faculty. A committee is now working on this problem." (Letter of State Supt. J. E. Swearingen, Mar. 15, 1916.)

Allen University (colored), Columbia.
Anderson College, Anderson.
Benedict College (colored), Columbia.
Chicora College for Women, Columbia.
The Citadel, The Military College of South Carolina, Charleston.
Claflin University (colored), Orangeburg.
Clemson Agricultural College, Clemson College.
Coker College for Women, Hartsville.
The College of Charleston, Charleston.
College for Women (merged with Chicora College for Women), Columbia.
Colored Normal, Industrial, Agricultural and Mechanical College of South Carolina, Orangeburg.

Converse College, Spartanburg.
Erskine College, Due West.
Furman University, Greenville.
Greenville Female College, Greenville.
Lander College, Greenwood.
Limestone College, Gaffney.
Memminger High and Normal School, Charleston.
Newberry College, Newberry.
Presbyterian College of South Carolina, Clinton.
University of South Carolina, Columbia.
Winthrop Normal and Industrial College, Rockhill.
Wofford College, Spartanburg.
Woman's College of Due West, Due West.

SOUTH DAKOTA.

Recognition of the collegiate institutions of South Dakota by the department of public instruction is based upon the extent of the course of study, hours required for graduation, and upon the faculty and equipment of the institution. Graduate credits of students of recognized institutions are accepted toward teachers' certificates without examination.

Augustana College, Canton.
Dakota Wesleyan University, Mitchell.
Sioux Falls College, Sioux Falls.
South Dakota College of Agriculture and Mechanic Arts, Brookings.

State School of Mines, Rapid City.
University of South Dakota, Vermillion.
Yankton College, Yankton.

TENNESSEE.

The Department of Public Instruction of Tennessee has no list of accredited colleges. All teachers applying for professional certificates must present a transcript of their work from the institution from which they graduated. Certificates are issued as follows:

1. An elementary certificate of the first grade is issued to all who have completed the academic course of the State normal schools.
2. A certificate good in all schools, except high schools of the first class, is issued to all who have completed the normal course of the State normal schools.
3. A high-school certificate of the first grade is issued to all applicants who are graduates of the State university who have completed any six half-year courses offered by the university in psychology, history of education, principles of teaching and school management, not less than two of which shall have special reference to high-school work.
4. Certificates may be issued to applicants who are graduates of an accredited school.

An accredited school is defined as follows:

An accredited school is a college that requires 14 units for entrance and does four years of college work. In addition, the curriculum must include at least two half-year courses in education, one of which must be general methods of teaching. On this work an elementary certificate will be issued. An accredited school for a high-school certificate is one whose course in education is equal to that of the State university as given above.

TEXAS.

The following are the minimum requirements for a college or university of the first class as adopted by the State Department of Education of Texas and approved by the college section of the State Teachers' Association:

1. Entrance requirements should not be less than 14 standard high-school units.
2. The completion of 4 years of work of 36 weeks each, with an average of not less than fifteen 60-minute recitations per week. During each year the student may not complete, as a rule, more than one-fourth of the requirements for graduation, except when making up conditions. Should the college have 4 quarters of 12 weeks each, then a student may graduate in less than 4 years. At least one year of actual residence work should be required of all students who enter with advanced standing.
3. The conferring of a multiplicity of degrees is to be discouraged. It is far better for a small institution to build up one strong degree.
4. There should be maintained at least seven separate departments in liberal arts and sciences, with not less than one professor devoting his whole time to each department.
5. The college should be separate from any academic or preparatory school to the extent of separate faculties and classes.
6. A faculty properly qualified shall consist entirely of graduates of standard colleges and each head of a department shall hold at least a master's degree

from a standard college or have attained eminent success as a teacher. Graduate study and training in research equivalent to that required for the Ph. D. degree are urgently recommended. In departments of education, in addition to the above requirements, teachers should have had successful experience in public-school work.

7. Heads of departments should not receive salaries less than those paid by standard institutions. The average salary paid to members of the faculty is a serious factor in determining the standing of any institution.

8. The number of hours of work given by each teacher will vary in the different departments. To determine this, the amount of preparation required for the class and the time needed for study to keep abreast of the subject, together with the number of students, must be taken into account; but in no case shall more than 20 hours per week be required, 15 being recommended as a maximum.

9. The number of students in a recitation or laboratory class should be limited to 30. A smaller number is much to be desired.

10. There should be an annual income of at least \$20,000 from either or all of tuition fees, rent, or endowment. This does not include charges for board.

11. The library should contain, exclusive of public documents and periodicals, 5,000 volumes bearing specifically upon the subjects taught.

12. The laboratory equipment should be sufficient to perform all of the experiments called for by the courses offered in the sciences—sufficiency to be measured by the value of the apparatus—which shall be, in chemistry, not less than \$2,500; in physics, not less than \$3,500; in biology, not less than \$2,500.

13. The location and construction of the buildings, the lighting, heating, and ventilation of the rooms, the nature of the laboratories, corridors, closets, water supply, school furniture, apparatus, and methods of cleaning shall be such as to insure hygienic conditions for both students and teachers.

14. The character of the curriculum, the efficiency of instruction, the scientific spirit, the standard for regular degrees, the conservatism in granting honorary degrees, and the tone of the institution shall also be factors in determining its standing.

15. The institution must be able to prepare its graduates to enter recognized schools as candidates for advanced degrees.

To the holder of a bachelor of arts degree or any higher degree from a first-class college or university, who has completed four full courses in education and pedagogy, may be issued a permanent State certificate.

Alabama :

Alabama Polytechnic Institute, Auburn.
Mobile Kindergarten Training School,
Mobile.
University of Alabama, University.
Tuskegee Normal and Industrial Institute (colored), Tuskegee.

Arkansas :

Ouachita College, Arkadelphia.
University of Arkansas, Fayetteville.

California :

Leland Stanford Junior University,
Stanford University.
Pomona College, Claremont.
State Normal School, Los Angeles.
University of California, Berkeley.

Colorado :

Colorado College, Colorado Springs.
State Teachers College of Colorado,
Greeley.
University of Colorado, Boulder.
University of Denver, University Park.
Connecticut : Yale University, New Haven.

District of Columbia :

George Washington University, Washington.
Howard University (colored), Washington.

Florida : University of Florida, Gainesville.

Georgia :

Atlanta University (colored), Atlanta.
Emory College, Oxford.

Georgia—Continued.

Mercer University, Macon.
 North Georgia Agricultural College,
 Dahlonega.
 University of Georgia, Athens.

Illinois:

Chicago Kindergarten College, Chicago.
 Illinois College, Jacksonville.
 Illinois Wesleyan University, Bloomington.
 Illinois State Normal University, Normal.
 James Millikin University, Decatur.
 Knox College, Galesburg.
 Northern Illinois State Normal School, De Kalb.
 Northwestern University, Evanston.
 Pestalozzi-Froebel Kindergarten Training School, Chicago.
 Southern Illinois State Normal University, Carbondale.
 University of Chicago, Chicago.
 University of Illinois, Urbana.

Indiana:

Butler College, Indianapolis.
 De Pauw University, Greencastle.
 Earlham College, Earlham.
 Hanover College, Hanover.
 Indiana State Normal School, Terre Haute.
 Indiana University, Bloomington.
 Purdue University, Lafayette.
 Teachers College of Indianapolis (kindergarten department), Indianapolis.

Iowa:

Cornell College, Mount Vernon.
 Drake University, Des Moines.
 Iowa State Teachers College, Cedar Falls.
 Iowa Wesleyan University, Mount Pleasant.
 Penn College, Oskaloosa.
 State University of Iowa, Iowa City.
 Tabor College, Tabor.

Kansas:

Baker University, Baldwin City.
 College of Emporia, Emporia.
 Ottawa University, Ottawa.
 State Manual Training Normal School, Pittsburg.
 State Normal School, Emporia.
 University of Kansas, Lawrence.
 Washburn College, Topeka.

Kentucky:

Bethel College, Russellville.
 Louisville Normal School, Louisville.
 State University of Kentucky, Lexington.

Louisiana:

H. Sophie Newcomb Memorial College, New Orleans.
 Louisiana State Normal School, Natchitoches.
 Louisiana State University, Baton Rouge.
 New Orleans Normal School, New Orleans.

Louisiana—Continued.

New Orleans University (colored), New Orleans.
 Tulane University of Louisiana, New Orleans.

Maine:

Bates College, Lewiston.
 Colby College, Waterville.

Maryland: Western Maryland College, Westminster.**Massachusetts:**

Amherst College, Amherst.
 Clark University, Worcester.
 Harvard University, Cambridge.
 Smith College, Northampton.
 State Normal School, Worcester.
 Wellesley College, Wellesley.

Michigan:

Central State Normal School, Mount Pleasant.
 Hilldale College, Hilldale.
 Kalamazoo College, Kalamazoo.
 Michigan State Normal College, Ypsilanti.
 Olivet College, Olivet.
 University of Michigan, Ann Arbor.

Minnesota:

State Normal School, St. Cloud.
 University of Minnesota, Minneapolis.

Mississippi:

Industrial Institute and College, Columbus.
 Millsaps College, Jackson.
 Mississippi College, Clinton.
 University of Mississippi, University.

Missouri:

Central College, Fayette.
 Christian University, Canton.
 Drury College, Springfield.
 Harris Teachers College, St. Louis.
 Missouri Valley College, Marshall.
 Park College, Parkville.
 State Normal School, Cape Girardeau.
 State Normal School, Kirksville.
 State Normal School, Springfield.
 State Normal School, Warrensburg.
 University of Missouri, Columbia.
 Westminster College, Fulton.

Nebraska:

Doane College, Crete.
 Nebraska Wesleyan University, University Place.
 State Normal School, Peru.
 University of Nebraska, Lincoln.

New Hampshire: Dartmouth College, Hanover.**New Jersey: State Normal School, Trenton.****New York:**

Alfred University, Alfred.
 Columbia University, New York.
 Cornell University, Ithaca.
 Hamilton College, Clinton.
 Hunter College of the City of New York, New York.
 State Normal School, Buffalo.
 State Normal and Training School, Fredonia.

New York—Continued.

State Normal School, Plattsburg.
 State Normal and Training School,
 Potsdam.
 Syracuse University, Syracuse.
 United States Military Academy, West
 Point.

Vassar College, Poughkeepsie.

North Carolina:

Davidson College, Davidson.
 Shaw University (colored), Raleigh.
 State Normal and Industrial College,
 Greensboro.
 Trinity College, Durham.
 University of North Carolina, Chapel
 Hill.
 Wake Forest College, Wake Forest.

Ohio:

Antioch College, Yellow Springs.
 College for Women (Western Reserve
 University), Cleveland.
 College of Wooster, Wooster.
 Denison University, Granville.
 Heidelberg University, Tiffin.
 Miami University, Oxford.
 Oberlin College, Oberlin.
 Ohio State University, Columbus.
 Ohio University, Athens.
 Ohio Wesleyan University, Delaware.
 Oxford College for Women, Oxford.
 Wilberforce University (colored), Wil-
 berforce.

Oklahoma:

Oklahoma Agricultural and Mechani-
 cal College, Stillwater.
 University of Oklahoma, Norman.

Pennsylvania:

Albright College, Myerstown.
 Bryn Mawr College, Bryn Mawr.
 Bucknell University, Lewisburg.
 Franklin and Marshall College, Lan-
 caster.
 Geneva College, Beaver Falls.
 Haverford College, Haverford.
 Pennsylvania College, Gettysburg.
 Southwestern State Normal School,
 California.
 State Normal School, Clarion.
 State Normal School, Millersville.
 State Normal School, West Chester.
 Swarthmore College, Swarthmore.

Rhode Island: Brown University, Provi-
dence.

South Carolina:

Converse College, Spartanburg.
 Newberry College, Newberry.
 University of South Carolina, Colum-
 bia.
 Winthrop Normal and Industrial Col-
 lege, Rockhill.
 Wofford College, Spartanburg.

South Dakota: University of South Da-
kota, Vermillion.

Tennessee:

Cumberland University, Lebanon.
 Fisk University (colored), Nashville.

Tennessee—Continued.

Middle Tennessee State Normal School,
 Murfreesboro.

Roger Williams University (colored),
 Nashville.

University of Chattanooga, Chatta-
 nooga.

University of Tennessee, Knoxville.

Vanderbilt University, Nashville.

Texas:

Agricultural and Mechanical College
 of Texas, College Station.

Austin College, Sherman.

Baylor College, Belton.

Baylor University, Waco.

Bishop College (colored), Marshall.

College of Industrial Arts, Denton.

Dallas Free Kindergarten Training
 School and Industrial Association,
 Dallas.

Daniel Baker College, Brownwood.

Fort Worth Kindergarten Training
 School, Fort Worth.

Howard Payne College, Brownwood.

Kindergarten Training School, Houston.

North Texas State Normal School,
 Denton.

Prairie View State Normal and In-
 dustrial College (colored), Prairie
 View.

Rice Institute, Houston.

Sam Houston State Normal Institute,
 Huntsville.

San Antonio Kindergarten Training
 School, San Antonio.

Simmons College, Abilene.

Southern Methodist University, Dallas.

Southwestern University, Georgetown.

Southwest Texas State Normal School,
 San Marcos.

Texas Christian University, Fort
 Worth.

Texas Woman's College, Fort Worth.

Trinity University, Waxahachie.

University of Texas, Austin.

West Texas State Normal School,
 Canyon City.

Wiley University (colored), Marshall.

Virginia:

Emory and Henry College, Emory.

Hampden-Sidney College, Hampden-
 Sidney.

Randolph-Macon College, Ashland.

Randolph-Macon Woman's College,
 Lynchburg.

Richmond College, Richmond.

Washington and Lee University, Lex-
 ington.

West Virginia: West Virginia University,
 Morgantown.

Wisconsin:

State Normal School, Stevens Point.

University of Wisconsin, Madison.

Wyoming: University of Wyoming, Laramie.

UTAH.

The Utah Department of Public Instruction has no list of accredited collegiate institutions. With respect to the certification of teachers, however, the State board of education provides that graduates of standard colleges requiring four years of secondary-school work for entrance and four years of college work for graduation are granted licenses without examination to teach in the high schools of the State, provided their college work includes one year of professional training for teachers.

VERMONT.

The State Education Department of Vermont does not formally approve collegiate institutions. Five-year certificates, without examination, are given to graduates of four-year college courses following an eight-year elementary course.

VIRGINIA.

Institutions "registered" (approved) by the State Board of Education of Virginia.

Definition of a registered university:

The State Board of Education of Virginia will register as a university an institution (a) which requires for admission the completion of the curriculum of a standard high school with a four years' course, or, in other terms, the completion of a course equivalent to not less than fourteen 5-hour units; (b) which contains as a part of its organization a college of literature and science, as defined below; (c) which contains one or more professional schools as parts of its organization, in each of which an adequate professional course, based upon a preparation not less than that represented by the completion of a standard four-year high-school course, is offered; (d) which contains a graduate school as a part of its organization, in which adequate courses leading to the degrees of master of arts and doctor of philosophy are offered.

The holder of a degree from a graduate school of a registered university based upon a curriculum which requires at least 10 per cent of professional work for such degree may receive a professional university certificate.

Definition of a registered college:

An institution to be registered as a college must have at least six professors giving their full time to college work, a course of four full years in liberal arts and sciences, and must require for admission the completion of the curriculum of a standard high school with a four years' course, or, in other terms, the completion of a course equivalent to at least fourteen 5-hour units, in addition to the usual preacademic or grammar school studies.

The holder of a baccalaureate degree from a registered college based upon a curriculum which requires at least 10 per cent of professional work for such degree may be granted a professional college certificate.

Bridgewater College, Bridgewater.
College of William and Mary, Williamsburg.
Elizabeth College, Salem.
Emory and Henry College, Emory.
Hampden-Sidney College, Hampden-Sidney.
Hollins College, Hollins.
Martha Washington College, Abingdon.
Randolph-Macon College, Ashland.
Randolph-Macon Woman's College, Lynchburg.

Richmond College, Richmond.
Roanoke College, Salem.
Sweet Briar College, Sweet Briar.
University of Virginia, Charlottesville.
Virginia Christian College, Lynchburg.
Washington and Lee University, Lexington.
Westhampton College, Richmond.

Institutions ranking as standard technical colleges.

Virginia Agricultural and Mechanical College and Polytechnic Institute, Blacksburg.

Virginia Military Institute, Lexington.

Registered State institutions.

(To those completing courses in these institutions certificates are issued in accordance with the character and amount of work completed.)

College of William and Mary, Williamsburg.
Hampton Normal and Industrial Institute (colored), Hampton.¹
State Normal School for Women, Farmville.
State Normal and Industrial School for Women, Fredericksburg.
State Normal and Industrial School for Women, Harrisonburg.

State Normal School for Women, East Radford.
University of Virginia, Charlottesville.
Virginia Agricultural and Mechanical College and Polytechnic Institute, Blacksburg.
Virginia Military Institute, Lexington.
Virginia Normal and Industrial Institute (colored), Petersburg.

WASHINGTON.

In accrediting institutions for the issuance to their graduates of certificates to teach in the public schools of Washington, the State board of education makes use of the principles adopted by the conference of chief State school officers of the North Central and Western States, Salt Lake City, Utah, November 17-19, 1910.

Definition of a standard college or university adopted by the conference:

To be considered a standard college all of the following conditions must be fully met:

1. The completion of a four-year secondary course above the eighth grade shall be required for college entrance.
2. The completion of 120 semester hours shall be required for graduation.
3. The number of class hours for the heads of departments and for students shall not exceed 20 a week.

¹ Not a State school, but accredited on the same basis as State institutions.

4. A faculty properly qualified shall consist entirely of graduates of standard colleges, and each head of a department shall hold at least a master's degree from a standard college or have attained eminent success as a teacher, which success shall be determined by the chief State school officer of the State in which the institution is located.

5. The library shall consist of at least 5,000 volumes, selected with reference to college subjects and exclusive of public documents.

6. The laboratory equipment shall be sufficient to establish efficient laboratories in all laboratory courses offered.

7. The means of support are defined as requiring a permanent endowment of not less than \$200,000, or an assured fixed annual income exclusive of tuition of at least \$10,000. The college must maintain at least seven separate departments or chairs in the arts and sciences. In case the pedagogical work of the institution is to be accepted for certification, the college must maintain at least eight chairs, one of which shall be devoted exclusively to education, or at least to philosophy, including psychology and education. The head of each department shall in no case devote less than three-fourths of his time to college work.

The 1915 session of the State legislature passed the following law concerning the certification of teachers:

That graduates of accredited colleges and universities must present evidence that they have completed satisfactorily 12 semester hours in professional study in an accredited institution, or else pass an examination in such professional subjects as the State board of education may direct.

By a standard normal school is meant a school meeting the following requirements:¹

1. For entrance, four years' work above the eighth grade in an accredited secondary school.

2. For graduation therefrom, two years' additional work, including a thorough review of the common branches and training in a practice school.

3. The maintenance of a well-equipped training school for observation and practice, such school to cover work in the eight elementary grades.

4. The total attendance in the secondary school and in the normal school shall be 216 weeks above the eighth grade; provided, that any normal school may accept satisfactory credits covering 20 weeks' work above the eighth grade.

Institutions accredited by the Department of Education of Washington to July 1, 1917.

Arizona:

Tempe Normal School of Arizona,
Tempe.
Northern State Normal School, Flag-
staff.

Arkansas: University of Arkansas, Fayetteville.

California:

Chico State Normal School.
Leland Stanford Junior University,
Stanford University.
Los Angeles State Normal School.
Mills College, Mills College.

California—Continued.

Occidental College, Los Angeles.
Pomona College, Claremont.
San Diego State Normal School.
San Francisco State Normal School.
San Jose State Normal School.
University of California, Berkeley.
University of Southern California, Los Angeles.

Colorado:

Colorado Agricultural College, Fort Collins.
Colorado College, Colorado Springs.

¹ Adopted by the conference of chief State school officers of the North Central and Western States, Salt Lake City, Utah, Nov. 17-19, 1910.

Colorado—Continued.

Colorado State Normal School, Gunnison.
 State Teachers College of Colorado, Greeley.
 University of Colorado, Boulder.
 University of Denver, University Park.

Connecticut:

New Britain State Normal Training School.
 Wesleyan University, Middletown.
 Willimantic State Normal Training School.
 Yale University, New Haven.

District of Columbia:

George Washington University, Washington.
 James Ormond Wilson Normal School, Washington.

Idaho:

Albion State Normal School.
 Lewiston State Normal School.
 University of Idaho, Moscow.

Illinois:

Chicago Normal School, Chicago.
 Eastern Illinois State Normal School, Charleston.
 Illinois College, Jacksonville.
 Illinois State Normal University, Normal.
 James Millikin University, Decatur.
 Knox College, Galesburg.
 Lake Forest College, Lake Forest.
 Lewis Institute (B. S. course, mechanical engineering), Chicago.
 Monmouth College, Monmouth.
 Northern Illinois State Normal School, De Kalb.
 Northwestern University, Evanston.
 Southern Illinois State Normal University, Carbondale.
 University of Chicago School of Education, Chicago.
 University of Chicago, Chicago.
 University of Illinois, Urbana.
 Western Illinois State Normal School, Macomb.

Indiana:

Butler College, Indianapolis.
 De Pauw University, Greencastle.
 Earlham College, Earlham.
 Franklin College, Franklin.
 Hanover College,¹ Hanover.
 Indiana State Normal School, Terre Haute.
 Indiana University, Bloomington.
 Purdue University, Lafayette.
 University of Notre Dame, Notre Dame.
 Wabash College, Crawfordsville.

Iowa:

Coe College, Cedar Rapids.
 Cornell College, Mount Vernon.
 Drake University, Des Moines.
 Drake University Normal Department, Des Moines.

Iowa—Continued.

Grinnell College, Grinnell.
 Iowa State College of Agriculture and Mechanic Arts, Ames.
 Iowa State Teachers College, Cedar Falls.
 Iowa Wesleyan University, Mount Pleasant.
 Morningside College, Sioux City.
 Parsons College,¹ Fairfield.
 Penn College,¹ Oskaloosa.
 Simpson College, Indianola.
 State University of Iowa, Iowa City.
 Upper Iowa University, Fayette.

Kansas:

Baker University, Baldwin City.
 Emporia State Normal School.
 Kansas State Agricultural College, Manhattan.
 Ottawa University, Ottawa.
 Pittsburg State Manual Training Normal School.
 University of Kansas, Lawrence.
 Washburn College, Topeka.

Kentucky:

Central University of Kentucky, Danville.
 Eastern Kentucky State Normal School, Richmond.
 University of Kentucky, Lexington.
 Western Kentucky State Normal School, Bowling Green.

Louisiana: Louisiana State Normal School, Natchitoches.

Maine:

Bates College, Lewiston.
 Bowdoin College, Brunswick.
 Colby College, Waterville.
 Farmington State Normal School.
 Gorham State Normal School.

Maryland:

Goucher College, Baltimore.
 Johns Hopkins University, Baltimore.

Massachusetts:

Amherst College, Amherst.
 Boston Normal School.
 Boston University, Boston.
 Bridgewater State Normal School.
 Clark University, Worcester.
 College of the Holy Cross, Worcester.
 Fitchburg State Normal School.
 Framingham State Normal School.
 Harvard University, Cambridge.
 Massachusetts Agricultural College, Amherst.
 Massachusetts Institute of Technology, Cambridge.
 Mount Holyoke College, South Hadley.
 North Adams State Normal School.
 Radcliffe College, Cambridge.
 Salem State Normal School.
 Simmons College, Boston.
 Smith College, Northampton.
 Tufts College, Tufts College.
 Wellesley College, Wellesley.
 Westfield State Normal School.

¹ After January, 1912, until January, 1915.

Massachusetts—Continued.

Williams College, Williamstown.
Worcester State Normal School.

Michigan :

Albion College, Albion.
Alma College, Alma.
Central State Normal School, Mount Pleasant.
Hillsdale College, Hillsdale.
Hope College,¹ Holland.
Kalamazoo College, Kalamazoo.
Michigan Agricultural College, East Lansing.
Michigan State Normal College, Ypsilanti.
Northern State Normal School, Marquette.
Olivet College, Olivet.
University of Michigan, Ann Arbor.
Western State Normal School, Kalamazoo.

Minnesota :

Carleton College, Northfield.
Duluth State Normal School.
Hamline University, St. Paul.
Macalester College, St. Paul.
Mankato State Normal School.
Moorhead State Normal School.
St. Cloud State Normal School.
St. Olaf College,¹ Northfield.
University of Minnesota, Minneapolis.
Winona State Normal School.

Mississippi :

Industrial Institute and College, Columbus.
University of Mississippi, University.

Missouri :

Cape Girardeau State Normal School.
Drury College, Springfield.
Kirksville State Normal School.
Marysville State Normal School.
Park College, Parkville.
Springfield State Normal School (degree courses only).
University of Missouri, Columbia.
University of Missouri School of Education, Columbia.
Warrensburg State Normal School.
Washington University, St. Louis.
William Jewell College, Liberty.

Montana :

Montana College of Agriculture and Mechanic Arts, Bozeman.
Montana State Normal School, Dillon.
University of Montana, Missoula.

Nebraska :

Chadron State Normal School.
Creighton University, Omaha.
Doane College,¹ Crete.
Kearney State Normal School.
Nebraska Wesleyan University, University Place.
Peru State Normal School.
University of Nebraska, Lincoln.

Nevada : University of Nevada Normal Department, Reno.

New Hampshire :

Dartmouth College, Hanover.
Plymouth State Normal School.

New Jersey :

New Jersey State Normal School, Montclair.
New Jersey State Normal School, Trenton.
Princeton University, Princeton.

New Mexico :

New Mexico Normal University, Las Vegas.
New Mexico Normal School, Silver City.

New York :

Alfred University, Alfred.
Brockport State Normal and Training School.
Buffalo State Normal School.
Colgate University, Hamilton.
College of the City of New York.
Columbia University, New York.
Cornell University, Ithaca.
Cortland State Normal and Training School.
Fredonia State Normal and Training School.
Geneseo State Normal School.
Hobart College, Geneva.
Hunter College of the City of New York.
New Paltz State Normal School.
New York State College for Teachers, Albany.
New York University, New York.
Oneonta State Normal and Training School.
Oswego State Normal School.
Plattsburg State Normal School.
Potdam State Normal School.
St. Lawrence University, Canton.
Syracuse University, Syracuse.
Training School for Teachers, Jamaica.
University of Rochester, Rochester.
Vassar College, Poughkeepsie.
Wells College, Aurora.

North Carolina : University of North Carolina, Chapel Hill.

North Dakota :

Mayville State Normal School.
North Dakota Agricultural College, Agricultural College.
University of North Dakota, University.
University of North Dakota School of Education, University.
Valley City State Normal School.

Ohio :

College of Wooster, Wooster.
Denison University, Granville.
Heidelberg University, Tiffin.
Hiram College, Hiram.
Lake Erie College, Painesville.
Marietta College, Marietta.
Miami University, Oxford.
Miami University State Normal College, Oxford.

¹After January, 1912, until January, 1915.

Ohio—Continued.

Mount Union College, Alliance.
 Oberlin College, Oberlin.
 Ohio State University, Columbus.
 Ohio Wesleyan University, Delaware.
 State Normal College, Athens.
 State Normal College, Kent.
 University of Cincinnati, Cincinnati.
 Western College for Women, Oxford.
 Western Reserve University, Cleveland.
 Wittenberg College, Springfield.

Oklahoma :

Central State Normal School, Edmond.
 Northwestern State Normal School,
 Tahlequah.
 Oklahoma Agricultural and Mechanical
 College, Stillwater.
 Southeastern State Normal School,
 Durant.
 Southwestern State Normal School,
 Weatherford.
 University of Oklahoma, Norman.

Oregon :

Monmouth State Normal School.
 Oregon Agricultural College, Corvallis.
 Pacific University, Forest Grove.
 Reed College, Portland.
 University of Oregon, Eugene.
 Willamette University, Salem.

Pennsylvania :

Allegheny College, Meadville.
 Bloomsburg State Normal School.
 Bryn Mawr College, Bryn Mawr.
 Bucknell University, Lewisburg.
 Central State Normal School, Lock
 Haven.
 Clarion State Normal School.
 Cumberland Valley State Normal
 School, Shippensburg.
 Dickinson College, Carlisle.
 Drexel Institute, Philadelphia.
 East Stroudsburg State Normal School.
 Edinboro State Normal School.
 Franklin and Marshall College, Lan-
 caster.
 Indiana State Normal School.
 Keystone State Normal School, Kutz-
 town.
 Lehigh University, South Bethlehem.
 Mansfield State Normal School.
 Millersville State Normal School.
 Pennsylvania College, Gettysburg.
 Pennsylvania State College, State Col-
 lege.
 Slippery Rock State Normal School.
 Southwestern State Normal School,
 California.
 Swarthmore College, Swarthmore.
 University of Pennsylvania, Philadel-
 phia.
 Washington and Jefferson College,
 Washington.
 West Chester State Normal School.
 Westminster College, New Wilmington.

Rhode Island :

Brown University, Providence.
 Rhode Island State Normal School,
 Providence.

South Dakota :

Madison State Normal School.
 Northern Normal and Industrial
 School, Aberdeen.
 South Dakota State College of Agri-
 culture and Mechanic Arts, Brook-
 ings.
 Spearfish State Normal School.
 Springfield State Normal School.
 University of South Dakota, Vermillion.
 University of South Dakota School of
 Education (four-year courses), Ver-
 million.

Tennessee :

George Peabody College for Teachers,
 Nashville.
 Maryville College, Maryville.

Texas : University of Texas, Austin.

Utah : University of Utah, Salt Lake City.

Vermont :

Middlebury College, Middlebury.
 University of Vermont, Burlington.

Virginia : State Normal School for Women,
 Farmville.

Washington :

Academy of Holy Names, Normal De-
 partment, Seattle.
 Academy of Holy Names, Normal De-
 partment, Spokane.
 Bellingham State Normal School.
 Cheney State Normal School.
 College of Puget Sound, Tacoma.
 College of Puget Sound, Normal De-
 partment, Tacoma.
 Ellensburg State Normal School.
 State College of Washington, Pullman.
 University of Washington, Seattle.
 Whitman College, Walla Walla.
 Whitworth College, Spokane.

West Virginia : West Virginia University,
 Morgantown.

Wisconsin :

Beloit College, Beloit.
 La Crosse State Normal School.
 Lawrence College, Appleton.
 Milwaukee-Downer College, Milwaukee.
 Milwaukee State Normal School.
 Oshkosh State Normal School.
 Platteville State Normal School.
 Ripon College, Ripon.
 River Falls State Normal School.
 Stevens Point State Normal School.
 Stout Institute, Menomonie.
 Superior State Normal School.
 University of Wisconsin, Madison.
 Whitewater State Normal School.

Wyoming :

University of Wyoming, Laramie.
 University of Wyoming State Normal
 School, Laramie.

WEST VIRGINIA.

The Department of Free Schools of West Virginia is not given any authority to inspect and classify the institutions of higher education in the State, except that institutions offering normal courses and applying for recognition of their normal graduates must offer courses at least equal to those offered in West Virginia normal schools.

WISCONSIN.

The Department of Public Instruction of Wisconsin has published no list of accredited collegiate institutions. The application of each candidate is considered individually.

The Wisconsin statute relating to the certification of teachers provides that all applications for licenses from graduates of foreign institutions must be submitted to the State board of examiners. This board has the authority to recommend the issuance of a license to any person who has completed at a reputable institution a course of study equivalent to the corresponding courses in the University of Wisconsin or the Wisconsin State normal schools.

WYOMING.

The University of Wyoming is the only collegiate institution of the State. The department of public instruction has approved no institutions outside the State.

PART III.—LISTS OF VOLUNTARY ORGANIZATIONS.

ASSOCIATION OF AMERICAN COLLEGES.¹

By-law 1 of the Association of American Colleges provides as follows:

In order to be eligible to membership in this association institutions shall require 14 units for admission to the freshman class and shall also require 120 semester hours for graduation, but the latter requirement may be waived by a two-thirds vote of the association.

Arkansas: Hendrix College, Conway.

California:

Leland Stanford Junior University,
Stanford University.

Occidental College, Los Angeles.

Pomona College, Claremont.

Throop College of Technology, Pasadena.

University of Southern California, Los Angeles.

Whittier College, Whittier.

Colorado:

Colorado College, Colorado Springs.

University of Denver, University Park.

Connecticut:

Connecticut College for Women, New London.

Wesleyan University, Middletown.

District of Columbia:

George Washington University, Washington.

Oriental University, Washington.

Potomac University, Washington.

Florida: John B. Stetson University, DeLand.

Idaho: College of Idaho, Caldwell.

Illinois:

Blackburn College, Carlinville.

Carthage College, Carthage.

Eureka College, Eureka.

Geneseo Collegiate Institute, Geneseo.

Greenville College, Greenville.

Hedding College, Abingdon.

Illinois College, Jacksonville.

Illinois Wesleyan University, Bloomington.

Illinois Woman's College, Jacksonville.

James Millikin University, Decatur.

Knox College, Galesburg.

Lake Forest College, Lake Forest.

Lincoln College, Lincoln.

Lombard College, Galesburg.

McKendree College, Lebanon.

Illinois—Continued.

Monmouth College, Monmouth.

Northwestern College, Naperville.

Northwestern University, Evanston.

Rockford College, Rockford.

Shurtleff College, Alton.

Wheaton College, Wheaton.

Indiana:

Butler College, Indianapolis.

DePauw University, Greencastle.

Earlham College, Earlham.

Franklin College, Franklin.

Hanover College, Hanover.

Rose Polytechnic Institute, Terre Haute.

Taylor University, Upland.

University of Notre Dame, Notre Dame.

Iowa:

Central College, Pella.

Coe College, Cedar Rapids.

Cornell College, Mount Vernon.

Des Moines College, Des Moines.

Drake University, Des Moines.

Dubuque College, Dubuque.

Ellsworth College, Iowa Falls.

Graceland College, Lamoni.

Grinnell College, Grinnell.

Highland Park College, Des Moines.

Iowa Wesleyan College, Mount Pleasant.

Leander Clark College, Toledo.

Lenox College, Hopkinton.

Luther College, Decorah.

Morningside College, Sioux City.

Parsons College, Fairfield.

Penn College, Oskaloosa.

Simpson College, Indianola.

Upper Iowa University, Fayette.

Kansas:

Baker University, Baldwin City.

Campbell College, Holton.

College of Emporia, Emporia.

¹ The list contains all colleges that joined during the first year (Feb. 1, 1915–Jan. 31, 1916) of the existence of the association.

Kansas—Continued.

Cooper College, Sterling.
 Fairmount College, Wichita.
 Kansas Wesleyan University, Salina.
 Midland College, Atchison.
 Ottawa University, Ottawa.
 Southwestern College, Winfield.

Kentucky :

Berea College, Berea.
 Georgetown College, Georgetown.
 Transylvania College, Lexington.
 University of Louisville, Louisville.

Louisiana : Louisiana College, Pineville.

Maine : Bates College, Lewiston.

Maryland :

Goucher College, Baltimore.
 Morgan College (colored), Baltimore.

Massachusetts :

Clark College, Worcester.
 Mount Holyoke College, South Hadley.
 Smith College, Northampton.
 Tufts College, Tufts College.
 Wellesley College, Wellesley.
 Wheaton College, Norton.
 Worcester Polytechnic Institute, Worcester.

Michigan :

Albion College, Albion.
 Alma College, Alma.
 Hillsdale College, Hillsdale.
 Hope College, Holland.
 Kalamazoo College, Kalamazoo.

Minnesota :

Carleton College, Northfield.
 Hamline University, St. Paul.
 Macalester College, St. Paul.
 St. Olaf College, Northfield.

Missouri :

Bible College of Missouri, Columbia.
 Central Wesleyan College, Warrenton.
 Forest Park College, St. Louis.
 Missouri Valley College, Marshall.
 Missouri Wesleyan College, Cameron.
 Palmer College, Albany.
 Park College, Parkville.
 Westminster College, Fulton.
 William Woods College, Fulton.

Nebraska :

Bellevue College, Bellevue.
 Creighton University, Omaha.
 Hastings College, Hastings.
 Nebraska Wesleyan University, University Place.
 York College, York.

New Jersey : Rutgers College, New Brunswick.

New York :

Alfred University, Alfred.
 Elmira College, Elmira.
 Hobart College, Geneva.
 St. Stephen's College, Annandale.
 University of Rochester, Rochester.
 Union College, Schenectady.
 Vassar College, Poughkeepsie.
 Wells College, Aurora.

North Carolina :

Davidson College, Davidson.
 Elon College, Elon.
 Guilford College, Guilford College.
 Salem Academy and College, Winston-Salem.
 Trinity College, Durham.

North Dakota :

Fargo College, Fargo.
 Jamestown College, Jamestown.

Ohio :

Baldwin-Wallace College, Berea.
 College of Wooster, Wooster.
 Defiance College, Defiance.
 Denison University, Granville.
 Franklin College, New Athens.
 Hiram College, Hiram.
 Kenyon College, Gambler.
 Lake Erie College, Painesville.
 Mount Union College, Alliance.
 Municipal University of Akron, Akron.
 Muskingum College, New Concord.
 Oberlin College, Oberlin.
 Ohio Wesleyan University, Delaware.
 Otterbein University, Westerville.
 Rio Grande College, Rio Grande.
 University of Cincinnati, Cincinnati.
 Western College for Women, Oxford.
 Western Reserve University, Cleveland.
 Wilberforce University, Wilberforce.
 Wilmington College, Wilmington.
 Wittenberg College, Springfield.

Oklahoma : Henry Kendall College, Tulsa.

Oregon : McMinnville College, McMinnville.

Pennsylvania :

Allegheny College, Meadville.
 Carnegie Institute of Technology, Pittsburgh.
 Dickinson College, Carlisle.
 Drexel Institute, Philadelphia.
 Geneva College, Beaver Falls.
 Haverford College, Haverford.
 Lafayette College, Easton.
 Lebanon Valley College, Annville.
 Lehigh University, South Bethlehem.
 Lincoln University, Lincoln University.
 Muhlenberg College, Allentown.
 Pennsylvania College, Gettysburg.
 Swarthmore College, Swarthmore.
 Temple University, Philadelphia.
 University of Pennsylvania, Philadelphia.
 University of Pittsburgh, Pittsburgh.
 Ursinus College, Collegeville.
 Washington and Jefferson College, Washington.
 Waynesburg College, Waynesburg.
 Westminster College, New Wilmington.

Rhode Island : Brown University, Providence.

South Carolina: Converse College, Spartanburg.

South Dakota:

Dakota Wesleyan University, Mitchell.

Huron College, Huron.

Yankton College, Yankton.

Tennessee:

Fisk University (colored), Nashville.

Maryville College, Maryville.

Southwestern Presbyterian University, Clarksville.

Tusculum College, Greeneville.

University of Chattanooga, Chattanooga.

University of the South, Sewanee.

Texas:

Baylor University, Waco.

Rice Institute, Houston.

Southwestern University, Georgetown.

Trinity University, Waxahachie.

Virginia:

Bridgewater College, Bridgewater.

Eastern College, Manassas.

Virginia—Continued.

Randolph-Macon College, Ashland.

Randolph-Macon Woman's College, Lynchburg.

Richmond College, Richmond.

Roanoke College, Salem.

Washington and Lee University, Lexington.

Washington: Whitman College, Walla Walla.

West Virginia:

Bethany College, Bethany.

West Virginia Wesleyan College, Buckhannon.

Wisconsin:

Beloit College, Beloit.

Campion College, Prairie du Chien.

Carroll College, Waukesha.

Lawrence College, Appleton.

Milton College, Milton.

Milwaukee-Downer College, Milwaukee.

Ripon College, Ripon.

ASSOCIATION OF AMERICAN UNIVERSITIES.

Institutions recommended by the Association of American Universities for the acceptance of their bachelor's degrees by foreign institutions.

The list includes the members of the Association of American Universities, the institutions on the accepted list of the Carnegie Foundation for the Advancement of Teaching,¹ and other American colleges and universities certified by the Carnegie Foundation as being of equivalent standing with the institutions on the foundation's list, but excluded therefrom because they are in some sense sectarian as defined in the terms of gift of the foundation.

The list includes no institution which does not require for admission a full four-year high-school course. It does not include any institution not supported by taxation which has a productive endowment of less than \$200,000, or any tax-supported institution whose annual income is less than \$100,000.

California:

Leland Stanford Junior University,

Stanford University.²

Pomona College, Claremont.

University of California, Berkeley.²

Colorado:

Colorado College, Colorado Springs.

University of Colorado, Boulder.

Connecticut:

Trinity College, Hartford.

Wesleyan University, Middletown.

Yale University, New Haven.²

District of Columbia: Catholic University of America, Washington.²

Georgia: University of Georgia, Athens.

Illinois:

Knox College, Galesburg.

Lake Forest College, Lake Forest.

Northwestern University, Evanston.

University of Chicago, Chicago.²

University of Illinois, Urbana.²

Indiana:

DePauw University, Greencastle.

Earlham College, Earlham.

¹ See p. 66.

² Member of the Association of American Universities.

Indiana—Continued.

Franklin College, Franklin.
 Indiana University, Bloomington.¹
 Purdue University, Lafayette.
 Rose Polytechnic Institute, Terre Haute.
 Wabash College, Crawfordsville.

Iowa :

Coe College, Cedar Rapids.
 Cornell College, Mount Vernon.
 Drake University, Des Moines.
 Grinnell College, Grinnell.
 Iowa State College of Agriculture and Mechanic Arts, Ames.
 State University of Iowa, Iowa City.¹

Kansas: University of Kansas, Lawrence.¹

Kentucky: Central University of Kentucky, Danville.

Louisiana: Tulane University of Louisiana, New Orleans.

Maine:

Bates College, Lewiston.
 Bowdoin College, Brunswick.
 Colby College, Waterville.
 University of Maine, Orono.

Maryland:

Goucher College, Baltimore.
 Johns Hopkins University, Baltimore.¹

Massachusetts:

Amherst College, Amherst.
 Boston University, Boston.
 Clark College, Worcester.
 Clark University, Worcester.¹
 Harvard University, Cambridge.¹
 Massachusetts Institute of Technology, Cambridge.
 Mount Holyoke College, South Hadley.
 Radcliffe College, Cambridge.
 Smith College, Northampton.
 Tufts College, Tufts College.
 Wellesley College, Wellesley.
 Williams College, Williamstown.
 Worcester Polytechnic Institute, Worcester.

Michigan: University of Michigan, Ann Arbor.¹

Minnesota:

Carleton College, Northfield.
 University of Minnesota, Minneapolis.¹

Missouri:

Drury College, Springfield.
 University of Missouri, Columbia.¹
 Washington University, St. Louis.
 William Jewell College, Liberty.

Nebraska: University of Nebraska, Lincoln.¹

New Hampshire: Dartmouth College, Hanover.

New Jersey:

Princeton University, Princeton.¹
 Rutgers College, New Brunswick.

New Jersey—Continued.

Stevens Institute of Technology, Hoboken.

New York:

Clarkson School of Technology, Potsdam.
 Colgate University, Hamilton.
 Columbia University, New York City.¹
 Cornell University, Ithaca.¹
 Elmira College, Elmira.
 Fordham University, Fordham.
 Hamilton College, Clinton.
 Hobart College, Geneva.
 New York University, New York City.
 Polytechnic Institute of Brooklyn, Brooklyn.

Rensselaer Polytechnic Institute, Troy.
 Syracuse University, Syracuse.
 Union University, Schenectady.
 University of Rochester, Rochester.
 Vassar College, Poughkeepsie.
 Wells College, Aurora.

North Carolina:

Trinity College, Durham.
 University of North Carolina, Chapel Hill.

North Dakota: University of North Dakota, University.

Ohio:

Case School of Applied Science, Cleveland.
 College of Wooster, Wooster.
 Kenyon College, Gambier.
 Marietta College, Marietta.
 Miami University, Oxford.
 Oberlin College, Oberlin.
 Ohio State University, Columbus.
 Ohio Wesleyan University, Delaware.
 University of Cincinnati, Cincinnati.
 Western Reserve University, Cleveland.

Oregon:

Reed College, Portland.
 University of Oregon, Eugene.

Pennsylvania:

Allegheny College, Meadville.
 Bryn Mawr College, Bryn Mawr.
 Dickinson College, Carlisle.
 Haverford College, Haverford.
 Lafayette College, Easton.
 Lehigh University, South Bethlehem.
 Pennsylvania State College, State College.
 Swarthmore College, Swarthmore.
 University of Pennsylvania, Philadelphia.¹
 University of Pittsburgh, Pittsburgh.
 Washington and Jefferson College, Washington.

Rhode Island: Brown University, Providence.

¹ Member of the Association of American Universities.

South Dakota : University of South Dakota,
Vermillion.

Tennessee :

University of Tennessee, Knoxville.

University of the South, Sewanee.

Vanderbilt University, Nashville.

Texas : University of Texas, Austin.

Vermont :

Middlebury College, Middlebury.

University of Vermont, Burlington.

Virginia : University of Virginia, Charlottesville.¹

Washington :

State College of Washington, Pullman.

University of Washington, Seattle.

Wisconsin :

Beloit College, Beloit.

Lawrence College, Appleton.

Ripon College, Ripon.

University of Wisconsin, Madison.¹

ASSOCIATION OF COLLEGES AND SECONDARY SCHOOLS OF THE SOUTHERN STATES.

Institutions of collegiate grade, members of the association November, 1916.

The by-laws relating to the requirements for membership in the association are as follows:

1. No college belonging to this association shall maintain a preparatory school as part of its college organization. In case such school is maintained under the college charter, it must be kept rigidly distinct in students, faculty, and discipline.

2. The completion of a secondary-school course covering at least the amount of work indicated in section 3 of these by-laws should be demanded of every student seeking admission to college. In measuring the amount of work done by such students the association accepts the valuation of a unit as fixed by the National Conference Committee on Standards, as follows:

A unit represents a year's study in any subject in a secondary school, constituting approximately a quarter of a full year's work.

This statement is designed to afford a standard of measurement for the work done in secondary schools. It takes the four-year high-school course as a basis and assumes that the length of the school year is from 36 to 40 weeks, that a period is from 40 to 60 minutes in length, and that the study is pursued for four or five periods a week; but under ordinary circumstances a satisfactory year's work in any subject can not be accomplished in less than 120 sixty-minute hours or their equivalent. Schools organized on any other than a four-year basis can, nevertheless, estimate their work in terms of this unit.

3. Fourteen units are required of all students admitted to college. Conditions are allowed to the extent of two units only, and all conditions or deficiencies should be removed before the beginning of the second year in college. College work done to remove conditions must not be counted toward a degree. Students may be admitted either on certificate or on examination, but they must in all cases comply with the above requirements as to the amount of work offered. The association strongly recommends that all candidates be required to offer English and mathematics, and that all candidates for a degree course in the college of liberal arts be required to offer in addition the necessary preparation in two foreign languages.

4. Special students may be admitted to college without the usual form of examination under the following conditions: (a) They must be of mature age (not less than 20 years is suggested); (b) they must not be admitted to classes for which entrance examinations are required unless they pass such examina-

¹ Member of the Association of American Universities.

tions; (c) they must give proof of adequate preparation for the courses sought; (d) their names must be separately printed in the catalogue.

Alabama :

Southern University, Greensboro.
University of Alabama, University.

Florida :

Florida State College for Women, Tallahassee.
University of Florida, Gainesville.

Georgia :

Agnes Scott College, Decatur.
Mercer University, Macon.
University of Georgia, Athens.

Kentucky :

Central University of Kentucky, Danville.
Transylvania College, Lexington.
University of Kentucky, Lexington.
University of Louisville, Louisville.

Louisiana :

Louisiana State University and Agricultural and Mechanical College, Baton Rouge.
Tulane University of Louisiana, New Orleans.

Maryland :

Goucher College, Baltimore.
Johns Hopkins University, Baltimore.

Mississippi :

Millsaps College, Jackson.
University of Mississippi, University.

Missouri : University of Missouri, Columbia.**North Carolina :**

Trinity College, Durham.
University of North Carolina, Chapel Hill.

South Carolina :

College of Charleston, Charleston.
Converse College, Spartanburg.

Tennessee :

George Peabody College for Teachers, Nashville.
Southwestern Presbyterian University, Clarksville.
University of Chattanooga, Chattanooga.
University of Tennessee, Knoxville.
University of the South, Sewanee.
Vanderbilt University, Nashville.

Texas :

Baylor University, Waco.
Rice Institute, Houston.
Southwestern University, Georgetown.
University of Texas, Austin.

Virginia :

Randolph-Macon College, Ashland.
Randolph Macon Woman's College, Lynchburg.
Richmond College, Richmond.
University of Virginia, Charlottesville.
Washington and Lee University, Lexington.

West Virginia : West Virginia University, Morgantown.

CARNEGIE FOUNDATION FOR THE ADVANCEMENT OF TEACHING.

The conditions established by the Carnegie Foundation in order that institutions may participate in the benefits of the fund are as follows:

Institutions of higher learning, including colleges, technical schools, and universities, whose work is clearly of college or university grade, may be admitted to participation in the benefits of the retiring allowance system sustained by the foundation.

Academic standing.—In order to be admitted to the retiring allowance system of the foundation, the essential work of an institution must be that of higher education, and of such a character that graduation from a four-year high-school course, or equivalent training, is a prerequisite therefor.

The term "college" is used to designate, in the United States¹ * * * institutions varying so widely in requirements for admission, standards of instruction, and facilities for work, that for the purposes of this foundation some arbitrary definition of that term is necessary. The following definition, in force in the State of New York, will be employed:

¹ The foundation's list includes also institutions in Canada and Newfoundland. In this bulletin, however, the names of all foreign institutions have been consistently omitted.

An institution to be ranked as a college must have at least six professors giving their entire time to college and university work, a course of four full years in liberal arts and sciences, and should require for admission not less than the usual four years of academic or high-school preparation, or its equivalent, in addition to the preacademic or grammar school studies.

A technical school, to be eligible, must have entrance and graduation requirements equivalent to those of the college, and must offer courses in pure and applied science of equivalent grade.

A tax-supported institution must be in receipt of an annual income of not less than \$100,000.

An institution not supported by taxation, in order to meet the requirement in regard to endowment, must have a productive endowment of not less than \$200,000 over and above any indebtedness of the institution.

In addition to the above conditions, the foundation specifies that, in so far as denominational control is concerned, institutions eligible to the benefits of the foundation are—

Colleges, universities, and technical schools of requisite academic grade, not owned or controlled by a religious organization, whose acts of incorporation or charters specifically provide that no denominational test shall be applied in the choice of trustees, officers, or teachers, or in the admission of students.

California :

Leland Stanford Junior University,
Stanford University.
University of California, Berkeley.

Colorado : Colorado College, Colorado Springs.

Connecticut :

Trinity College, Hartford.
Wesleyan University, Middletown.
Yale University, New Haven.

Illinois : Knox College, Galesburg.

Indiana :

Franklin College, Franklin.
Indiana University, Bloomington.
Purdue University, Lafayette.
Rose Polytechnic Institute, Terre Haute.
Wabash College, Crawfordsville.

Iowa :

Coe College, Cedar Rapids.
Drake University, Des Moines.
Grinnell College, Grinnell.

Kentucky : Central University of Kentucky, Danville.

Louisiana : Tulane University of Louisiana, New Orleans.

Maine :

Bates College, Lewiston.
Bowdoin College, Brunswick.

Maryland : Johns Hopkins University, Baltimore.

Massachusetts :

Amherst College, Amherst.
Clark University, Worcester.
Harvard University, Cambridge.
Massachusetts Institute of Technology, Cambridge.
Mount Holyoke College, South Hadley.

Massachusetts—Continued.

Radcliffe College, Cambridge.
Smith College, Northampton.
Tufts College, Tufts College.
Wellesley College, Wellesley.
Williams College, Williamstown.
Worcester Polytechnic Institute, Worcester.

Michigan : University of Michigan, Ann Arbor.

Minnesota :

Carleton College, Northfield.
University of Minnesota, Minneapolis.

Missouri :

Drury College, Springfield.
University of Missouri, Columbia.
Washington University, St. Louis.

New Hampshire : Dartmouth College, Hanover.

New Jersey :

Princeton University, Princeton.
Stevens Institute of Technology, Hoboken.

New York :

Clarkson College of Technology, Potsdam.
Columbia University, New York City.
Cornell University, Ithaca.
Hamilton College, Clinton.
Hobart College, Geneva.
New York University, New York City.
Polytechnic Institute of Brooklyn, Brooklyn.
Rensselaer Polytechnic Institute, Troy.
University of Rochester, Rochester.
Union University, Schenectady.
Vassar College, Poughkeepsie.
Wells College, Aurora.

Ohio:

Case School of Applied Science, Cleveland.
 Marietta College, Marietta.
 Oberlin College, Oberlin.
 University of Cincinnati, Cincinnati.
 Western Reserve University, Cleveland.

Pennsylvania:

Dickinson College, Carlisle.
 Lehigh University, South Bethlehem.
 Swarthmore College, Swarthmore.
 University of Pennsylvania, Philadelphia.

Pennsylvania—Continued.

University of Pittsburgh, Pittsburgh.
 Washington and Jefferson College, Washington.

Vermont:

Middlebury College, Middlebury.
 University of Vermont, Burlington.

Virginia: University of Virginia, Charlottesville.

Wisconsin:

Beloit College, Beloit.
 Lawrence College, Appleton.
 Ripon College, Ripon.
 University of Wisconsin, Madison.

NORTH CENTRAL ASSOCIATION OF COLLEGES AND SECONDARY SCHOOLS.

The following constitute the standards adopted by the association for inclusion in its list of approved institutions:

The standard American college is a college with a four-year curriculum with a tendency to differentiate its parts in such a way that the first two years are a continuation of, and a supplement to, the work of secondary instruction as given in the high school, while the last two years are shaped more or less distinctly in the direction of special, professional, or university instruction.

The following constitute the standards for accrediting colleges for the present year (1916):

1. The minimum scholastic requirement of all college teachers shall be equivalent to graduation from a college belonging to this association, and graduate work equal at least to that required for a master's degree. Graduate study and training in research equivalent to that required for the Ph. D. degree are urgently recommended, but the teacher's success is to be determined by the efficiency of his teaching, as well as by his research work.

2. The college shall require for admission not less than 14 secondary units, as defined by this association.

3. The college shall require not less than 120 semester hours for graduation.

4. The college shall be provided with library and laboratory equipment sufficient to develop fully and illustrate each course announced.

5. The college, if a corporate institution, shall possess a productive endowment of not less than \$200,000.

6. The college, if a tax-supported institution, shall receive an annual income of not less than \$100,000.

7. The college shall maintain at least eight distinct departments in liberal arts, each with at least one professor giving full time to the college work in that department.

8. The location and construction of the buildings, the lighting, heating, and ventilation of the rooms, the nature of the laboratories, corridors, closets, water supply, school furniture, apparatus, and methods of cleaning shall be such as to insure hygienic conditions for both students and teachers.

9. The number of hours of work given by each teacher will vary in the different departments. To determine this, the amount of preparation required for the class and the time needed for study to keep abreast of the subject,

together with the number of students, must be taken into account; but in no case shall more than 18 hours per week be required, 15 being recommended as a maximum.

10. The college must be able to prepare its graduates to enter recognized graduate schools as candidates for advanced degrees.

11. The college should limit the number of students in a recitation or laboratory class to 30.

12. The character of the curriculum, the efficiency of instruction, the scientific spirit, the standard for regular degrees, the conservatism in granting honorary degrees, and the tone of the institution shall also be factors in determining eligibility.

13. When an institution has, in addition to, the college of liberal arts, professional or technical schools or departments, the college of liberal arts shall not be accepted for the approved list of the association unless the professional or technical departments are of an acceptable grade.

Colorado:

Colorado College, Colorado Springs.
Colorado State Normal School, Gunnison.
State Teachers College of Colorado, Greeley.
University of Colorado, Boulder.
University of Denver, University Park.

Illinois:

Armour Institute of Technology, Chicago.
Augustana College, Rock Island.
Bradley Polytechnic Institute, Peoria.
Carthage College, Carthage.
Eastern Illinois State Normal School, Charleston.
Illinois College, Jacksonville.
Illinois State Normal University, Normal.
Illinois Wesleyan University, Bloomington.
Illinois Woman's College, Jacksonville.
James Millikin University, Decatur.
Knox College, Galesburg.
Lake Forest College, Lake Forest.
Lewis Institute, Chicago.
Monmouth College, Monmouth.
Northern Illinois State Normal School, De Kalb.
Northwestern College, Naperville.
Northwestern University, Evanston.
Rockford College, Rockford.
Southern Illinois State Normal School, Carbondale.
University of Chicago, Chicago.
University of Illinois, Urbana.
Western State Normal School, Macomb.
Wheaton College, Wheaton.

Indiana:

Butler College, Indianapolis.
DePauw University, Greencastle.
Earlham College, Earlham.
Franklin College, Franklin.
Hanover College, Hanover.
Indiana State Normal School, Terre Haute.
Indiana University, Bloomington.

Indiana—Continued.

Purdue University, Lafayette.
Rose Polytechnic Institute, Terre Haute.
University of Notre Dame, Notre Dame.
Wabash College, Crawfordsville.

Iowa:

Coe College, Cedar Rapids.
Cornell College, Mount Vernon.
Drake University, Des Moines.
Grinnell College, Grinnell.
Iowa State College of Agriculture and Mechanic Arts, Ames.
Iowa State Teachers College, Cedar Falls.
Iowa Wesleyan College, Mount Pleasant.
Luther College, Decorah.
Morningside College, Sioux City.
Parsons College, Fairfield.
Penn College, Oskaloosa.
Simpson College, Indianola.
State University of Iowa, Iowa City.
Upper Iowa University, Fayette.

Kansas:

Baker University, Baldwin City.
College of Emporia, Emporia.
Fort Hays Kansas Normal School, Hays.
Friends University, Wichita.
Kansas State Agricultural College, Manhattan.
Kansas State Normal School, Emporia.
Kansas Wesleyan University, Salina.
Ottawa University, Ottawa.
State Manual Training Normal School, Pittsburg.
University of Kansas, Lawrence.
Washburn College, Topeka.

Michigan:

Albion College, Albion.
Adrian College, Adrian.
Alma College, Alma.
Central State Normal School, Mount Pleasant.

Michigan—Continued.

Detroit Central High School Junior College, Detroit.
 Hope College, Holland.
 Kalamazoo College, Kalamazoo.
 Michigan Agricultural College, East Lansing.
 Michigan State Normal School, Ypsilanti.
 Northern State Normal School, Marquette.
 University of Michigan, Ann Arbor.
 Western State Normal School, Kalamazoo.

Minnesota :

Carleton College, Northfield.
 College of St. Catherine, St. Paul.
 College of St. Thomas, St. Paul.
 Gustavus Adolphus College, St. Peter.
 Hamline University, St. Paul.
 Macalester College, St. Paul.
 Mankato State Normal School.
 Moorhead State Normal School.
 St. Cloud State Normal School.
 St. Olaf College, Northfield.
 University of Minnesota, Minneapolis.
 Winona State Normal School.

Missouri :

Cape Girardeau State Normal School.
 Central College, Fayette.
 Drury College, Springfield.
 Kirksville State Normal School.
 Missouri Valley College, Marshall.
 Park College, Parkville.
 St. Louis University College of Liberal Arts, St. Louis.
 Springfield State Normal School.
 University of Missouri, Columbia.
 Warrensburg State Normal School.
 Washington University, St. Louis.
 Westminster College, Fulton.
 William Jewell College, Liberty.

Montana :

Montana College of Agriculture and Mechanic Arts, Bozeman.
 Montana State Normal School, Dillon.
 University of Montana, Missoula.

Nebraska :

Chadron State Normal School.
 Creighton University College of Liberal Arts, Omaha.
 Doane College, Crete.
 Hastings College, Hastings.
 Kearney State Normal School, Kearney.
 Nebraska Wesleyan University, University Place.
 Peru State Normal School.
 University of Nebraska, Lincoln.

North Dakota :

North Dakota Agricultural College, Agricultural College.
 University of North Dakota, University.
 Valley City State Normal School.

Ohio :

Baldwin-Wallace College, Berea.
 Bowling Green State Normal College.
 Case School of Applied Science, Cleveland.
 College of Wooster, Wooster.
 Defiance College, Defiance.
 Denison University, Granville.
 Heidelberg University, Tiffin.
 Hiram College, Hiram.
 Kent State Normal College.
 Kenyon College, Gambier.
 Lake Erie College, Painesville.
 Marietta College, Marietta.
 Miami University, Oxford.
 Mount Union College, Alliance.
 Municipal University of Akron, Akron.
 Oberlin College, Oberlin.
 Ohio State University, Columbus.
 Ohio University, Athens.
 Ohio Wesleyan University, Delaware.
 Otterbein University, Westerville.
 University of Cincinnati, Cincinnati.
 Western College for Women, Oxford.
 Western Reserve University, Cleveland.
 Wittenberg College, Springfield.

Oklahoma :

Oklahoma Agricultural and Mechanical College, Stillwater.
 University of Oklahoma, Norman.

South Dakota :

Dakota Wesleyan University, Mitchell.
 Huron College, Huron.
 South Dakota College of Agriculture and Mechanic Arts, Brookings.
 University of South Dakota, Vermillion.

Wisconsin :

Beloit College, Beloit.
 Carroll College, Waukesha.
 Lawrence College, Appleton.
 Milwaukee-Downer College, Milwaukee.
 Milwaukee State Normal School.
 Oshkosh State Normal School.
 Ripon College, Ripon.
 Stevens Point State Normal School.
 Superior State Normal School.
 University of Wisconsin, Madison.
 Whitewater State Normal School.

Wyoming: University of Wyoming, Laramie.

PART IV.—JUNIOR COLLEGES.

ARIZONA.

There are no junior colleges in Arizona, but graduates of the State normal schools are entitled to 30 units blanket credit at the University of Arizona.

ARKANSAS.

Crescent College, Eureka Springs, is the only junior college in the State. It has been approved by the University of Arkansas on the basis of the work offered in its courses being equivalent to the first two years of work in the university courses.

CALIFORNIA.

The policy of the University of California with reference to students entering from junior colleges is formulated by the recorder of the faculties as follows:

THE JUNIOR COLLEGE AND THE UNIVERSITY.

It is the university's policy to give a year's credit for a year's work on the basis of credentials from other colleges, including junior colleges. Wherever there is evidence that the institution is doing a full year of work beyond the high school, the University will endeavor to give 32 units (slightly more in the engineering colleges) and to distribute these 32 units in a way that will equitably meet requirements for the junior certificate and the bachelor's degree.

In the university, every lecture or recitation presupposes about two hours of outside preparation. In laboratory courses, the amount of work completed in the classroom is greater, and the amount of outside study relatively less, than in courses conducted by lecture or recitation, but the aggregate amount of work required for a unit of credit is in any case the same. It will therefore be seen that the normal university schedule of 16 units per half year implies about 48 hours per week of studious effort for 18 weeks. It has been estimated that the junior colleges as they are at present organized may complete 32 units per year by requiring five courses concurrently, each class meeting five periods per week in 40-minute periods throughout a 20-week semester. The same result may be obtained by having the classes or some of them meet four periods per week, the periods to be 45 or 50 minutes and the amount of outside preparation for the classwork to be proportionately greater than would be required if the meetings were five times weekly.

There is, of course, some danger in the situation so long as the university's test of the applicant's proficiency is primarily a time test, rather than a knowledge test. But the real unit for the application of the time test should be the unit of studious endeavor in or out of class, rather than the aggregate of hours or minutes spent in the classroom.

For a four-study schedule, such as is indicated above, continued for two years, we should expect in the ordinary case to give 64 units of credit. The units of credit assigned to a single subject continued for one year would be eight.

The successful articulation of junior-college work with university work will naturally depend very largely upon the extent to which the junior college is able to meet the varied departmental requirements of a large university. In some highly specialized departments it may be difficult for the junior college (as for any small institution) to afford adequate preparation. An example would be the field of engineering. Similarly, the work that is now required of premedical students (college laboratory courses in physics, chemistry, zoology, embryology, etc.) is not easily obtainable outside of the universities. Architecture and agriculture are in a similar position.

The following memorandum was furnished by the recorder of the faculties March 24, 1916:

As to the junior colleges, I will say that we have not yet attempted to make a definite listing. We are still investigating and collecting evidence concerning the organization of these institutions. In the meantime, we deal with the junior colleges, in a general way, just as we deal with other collegiate institutions. We get the chronology of the applicant's high school and later work and we evaluate the record just as we should evaluate it if it came from an institution maintaining a four-year baccalaureate course. I hand you herewith * * * a list of the junior colleges from which students have already been received in *junior standing* in the University of California. I suppose it would be quite safe to say of the junior colleges in this list that they are "accredited."

California junior colleges from which students have been transferred to the university in junior standing:

Fresno Junior College, Fresno.
Fullerton Junior College, Fullerton.
Hollywood Junior College, Hollywood.
Los Angeles Junior College, Los Angeles.

Polytechnic Junior College, Los Angeles.
San Diego Junior College, San Diego.
Santa Barbara Junior College, Santa Barbara.

IDAHO.

College courses at the Idaho Technical Institute (located at Pocatello) are so arranged as to correspond with the first two years' work of the University of Idaho.

ILLINOIS.

The following are the standards and regulations governing the accrediting of junior colleges by the University of Illinois:

STANDARDS.

1. The admission of high-school students to junior-college classes should be limited to students of senior standing and of superior scholarship; "superior scholarship" being interpreted to mean a rank within the first third of the class. The number of even these picked high-school seniors in any junior-college class should not in any case exceed one-half of the total membership of that class and should ordinarily be limited to one-third the total membership of the class.

2. The teachers in charge of the junior-college work in departments other than manual arts should have a bachelor's degree and should have had in addition at least a year of graduate study in the subject of their department in a university of recognized standing.

3. The teaching schedule of any instructor doing junior-college work should be limited to a maximum of 20 recitation periods per week (two laboratory periods being counted as equivalent to one recitation period).

4. The junior-college course should be organized and conducted on a collegiate as distinguished from a high-school basis. College texts should be used and should be supplemented with reference or other outside work of collegiate character, and the amount of ground covered in a semester should approximate that covered in corresponding college courses.

5. Junior-college classes should be provided with an adequate equipment of space and of available laboratory and library facilities for strictly college work.

REGULATIONS.

1. For work done in junior-college classes for which the above standards are approximately met, substantially hour-for-hour credit will be given at the time of the student's admission to the university, provided that the maximum credit allowed shall not exceed 18 hours per semester.

2. For work done in junior-college classes for which the above standards are only partially and semisatisfactorily met, substantially three-fourths credit in college hours may be given at the time of the student's admission, provided that the maximum credit allowed shall not exceed 13½ hours per semester.

3. A student who has been given partial credit on admission under the provision of paragraph 2 above may have such partial credit raised to full credit at the end of his first year's work in the university, provided (1) that he continues in the university any specific subject in which he has received partial credit and makes a grade of not less than 85 in that subject, or (2) if he does not continue any specific subject in the university, that he makes an average grade of not less than 85 in all the subjects of his first year's work.

4. For fifth-year or sixth-year work, which is but slightly differentiated by the above criterions from high-school work, substantially one-half credit in college hours may be given at the time of the student's admission, such credit not to exceed nine hours per semester.

Blackburn College, Carlinville.
Bradley Polytechnic Institute, Peoria.
Crane Junior College, Chicago.
Frances Shimer School, Mount Carroll.
Joliet Junior College, Joliet.

Lane Junior College, Chicago.
Monticello Seminary, Godfrey.
Senn Junior College (two years of college work beginning 1916-17), Chicago.

JUNIOR COLLEGES RECOGNIZED BY THE STATE EDUCATION DEPARTMENT OF ILLINOIS.

An institution to be ranked as a junior college must have at least four teachers giving their entire time to teaching a course of two full years of college grade (the equivalent of 60 semester hours in a recognized college) and shall require for admission not less than 15 secondary units of preparation in a recognized four-year high school, or its equivalent.

Students of recognized junior colleges shall be accorded the rights and privileges of the certificating law.

Bradley Polytechnic Institute, Peoria.
Lewis Institute, Chicago.

Joliet Junior College, Joliet.

Junior colleges recognized for one year:

Frances Shimer School, Mount Carroll.

Monticello Seminary, Godfrey.

MICHIGAN.

The junior college work of the following institutions has been recognized by the University of Michigan:

Central High School, Detroit.

| Grand Rapids High School.

MINNESOTA.

The standards adopted February, 1916, for judging Minnesota schools, offering one or two years of college work, are as follows:

Under the conditions hereinafter specified the University of Minnesota will recognize toward advanced standing credits earned in a school giving a college course in part, provided such school complies with the following regulations:

A. GENERAL CONDITIONS.

1. *Amount of work to be recognized.*—The maximum amount of college work to be recognized shall be two years, but in no case shall a second year's work be recognized until a school has for a reasonable length of time demonstrated its ability to do the first year's work satisfactorily.

2. *Limit to length of time of recognition.*—The normal period of recognition shall be one year. Renewals shall be subject to the continued compliance of the school with the standards.

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B. SPECIFIC REGULATIONS.

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2. *Courses to be offered at the school.*—At least one full year of college work—that is, 14 to 16 credits—must be offered, consisting of courses in at least four subjects with at least one subject in each of the three groups: Language, science and mathematics, social sciences.

3. *Students.*—Students admitted to these courses must be graduates of secondary schools accredited by the university.

4. *Teachers.*—(a) *Training and experience.* All persons giving instruction in such courses shall have done at least one full year's work in a recognized graduate school (ordinarily one year of graduate work in addition to at least two years of undergraduate study in the subject taught) with special attention to the subjects which they teach, and they must also have at least two years' successful experience as high-school teachers, or acceptable experience as college teachers.

(b) *Subjects and hours.* Each instructor shall teach not more than two subjects in the college division and shall not teach more than one five-period class in the high school. When in the opinion of the committee the college enrollment warrants, he shall give his full time to college teaching. The total amount of his classroom work shall be not more than 17 hours.

(c) The work of the instructor shall show evidence of ability to stimulate and hold the interest of his students so that they shall attain a mastery of and a proper attitude of mind toward the subject taught.

5. *Library and equipment.*—Each department shall be provided with books and apparatus sufficient to carry on its work in a proper manner. The books

may be in part in a city library if they can be drawn out for students' use under suitable regulations. For the information of the teacher, to maintain his interest and to keep him in touch with the spirit of his subject, the list of books must include both large reference works and two or three periodicals representing scientific or research activity in the subject. Provision must be made for reasonable additions to the library, involving an annual expenditure of from \$15 to \$75 for each study, depending upon the original equipment available and the nature of the subject.

6. *Inspection.*—Equipment and work of departments in such schools shall be inspected by qualified representatives of the corresponding university departments, appointed by the committee on the relation of the university to other institutions of learning after consultation with the departments. These representatives shall report their findings to the committee.

C. ADMISSION OF STUDENTS WITH ADVANCED CREDITS.

1. Students entering the university from a school whose work has been recognized shall be allowed not more than 16 credits for each semester of such work, provided the following conditions are fulfilled:

(a) All entrance requirements of the particular college in which the student enrolls must be met.

(b) The student must present a statement showing that the work for which credit is desired was completed in a satisfactory manner, and that he is entitled to honorable dismissal on the basis of his character and conduct.

(c) All work for which credit is allowed must be in subjects which may be counted toward a degree in the college in which the student enrolls.

The following high schools have recently begun work in their college departments under the above standards:

Cloquet High School.
Faribault High School.
Hibbing High School.
Jackson High School.

Rochester High School.
Stanley College, Minneapolis.
Villa St. Scolastica, Duluth.

Two classes of graduates from the Minnesota normal schools are accepted at the University of Minnesota: (1) Graduates of the advanced graduate course (two years above high-school graduation); (2) graduates of the advanced English or Latin course (five years). The college of education of the University of Minnesota grants 60 credits to graduates of class 1 and 42 credits to those in class 2. The college of science, literature, and the arts grants 30 credits to students in both classes, with the provision that those in class 2 have the special recommendation of the normal school president and be of mature years.

Duluth State Normal School.
Mankato State Normal School.
Moorhead State Normal School.

St. Cloud State Normal School.
Winona State Normal School.

MISSOURI.

The *minimum* requirements which a junior college must meet in order to be accredited by the University of Missouri are as follows:¹

1. The requirements for admission to the work of the college must be the equivalent of those of the college of arts and science in the University of Missouri.

High-school subjects which are required for admission are designated in terms of "units." A unit is the equivalent of a subject pursued five 40-minute periods a week for at least 36 weeks, except that in the cases of physical and biological sciences, and certain other subjects, two or more of the five periods each week must be double periods.

Fifteen units, the equivalent of a four years' high-school course, are required for entrance to the college of arts and science. Three units in English, one unit in mathematics, and two units in one foreign language are fixed requirements. The remaining nine may be selected from the following list, in which is indicated the maximum and minimum number of units accepted in each subject.

Subjects.	Maxi- mum.	Mini- mum.	Subjects.	Maxi- mum.	Mini- mum.
English.....	4	3	Chemistry.....	2	1
Algebra (elementary).....	1½	1	General biology.....	1	1
Plane geometry.....	1	1	Zoology.....	2	1
Solid geometry.....	1	1	Botany.....	2	1
Plane trigonometry.....	1	1	Physiology ²	1	1
Arithmetic (advanced) ³	1	1	Physical geography.....	1	1
Algebra (advanced) ³	1	1	Agriculture.....	2	1
History.....	4	1	Music.....	1	½
American government.....	½	½	Drawing.....	2	1
Latin.....	4	2	Manual training ⁴	2	1
Greek.....	3	2	Domestic science and art ⁴	2	1
German.....	3	2	Economics ⁴	½	½
French.....	3	2	Commercial geography ⁴	½	½
Spanish.....	3	2	Bookkeeping ⁴	1	½
Physics.....	2	1	Teacher training.....	2	2

¹ Must be preceded by the elementary courses in algebra and plane geometry. Credit for the advanced courses in both algebra and arithmetic are not accepted in the case of any individual student.

² In cases where the study of physiology has been preceded by a year's study of general biology, botany or zoology.

³ The maximum amount of commercial and industrial subjects accepted is 4 units.

2. If a preparatory school is maintained in connection with the college, its work must be approved by the University of Missouri.

3. The course of study in the college must be two years in length, and the college year 36 weeks.

4. For graduation from the college, the student must complete satisfactorily 60 hours of work, which must be the equivalent of that required in the first two years in the college of arts and science in the University of Missouri. This is as follows:

(a) Six hours of English; (b) five hours of history; (c) five hours of ancient languages and literature; (d) five hours of modern languages; (e) three hours of mathematics or logic; (f) five hours of physical science (astronomy, chemistry, geology and mineralogy, physics); (g) five hours of biological science (botany, experimental psychology, physiology, zoology).

These requirements may be waived on the following:

If the student presents 4 units for entrance in one of the requirements (b) or (c), or 3 in (d) or (e), or 2 in (f) or (g), he will be excused from that

⁴ The graduates of institutions recognized by the University of Missouri as junior colleges who have had at least 12 hours' work in education may be granted a certificate valid for three years.

requirement. Such exemptions do not excuse the student from the requirement of a total of 60 hours for graduation.

By an hour is meant a 60-minute period of class work or a 120-minute period of laboratory work (exclusive of preparatory instruction and study, work upon notebooks that can be done outside of laboratory, etc.), each week for one semester.

5. Students shall not be permitted to carry for credit work amounting to more than 16 hours a week.

6. There must be a sufficient number of teachers to conduct the work without crowding the classes or without assigning to individual teachers an excessive amount or variety of work.

7. All college teachers should have had training equivalent to four years' work in a standard college, and it is desirable that they should have completed one year's graduate work.

8. There must be a laboratory for physical science and a laboratory for biological science, each adequately equipped and sufficiently large to permit easily of individual work upon the part of the students.

9. There must be an adequate library equipment.

10. The college must give satisfactory instruction in the work specified in the fourth requirement and in addition must give satisfactory instruction in other courses which the student may take in completing the conditions for graduation.

Christian College, Columbia.

Cottay College, Nevada.

Hardin College, Mexico.

Howard-Payne College, Fayette.

Lindenwood College, St. Charles.

Pritchett College, Glasgow.

Stephens College, Columbia.

William Woods College, Fulton.

NEBRASKA.

There are no institutions in the State which are designated junior colleges. There are, however, certain schools doing two years of collegiate work which are inspected and approved on the same basis as the colleges, and whose graduates are also given the advantage of certification by the department of public instruction.

Chadron State Normal School.

Fremont College, Fremont.

Kearney State Normal School.

Wayne State Normal School.

OKLAHOMA.

The normal schools and one collegiate institution of the State are recognized as junior colleges. Their graduates are given credit in the University of Oklahoma for such work of the freshman and sophomore years as they have completed. The recognition of these schools and the method of admitting their students to the university correspond to the practice in the case of the colleges.

Central State Normal School, Edmond.

Colored Agricultural and Normal University, Langston.

East Central State Normal School, Ada.

Northeastern State Normal School, Tahlequah.

Northwestern State Normal School, Alva.

Southeastern State Normal School, Durant.

Southwestern State Normal School, Weatherford.

Oklahoma College for Women, Chickasha.

TEXAS.

The minimum requirements for a junior college adopted by the Texas State Teachers' Association, March 7, 1914, are as follows:

1. It should require not less than 14 standard units for entrance.
2. It should add thereto two years of college work, or fifteen 60-minute hours per week of recitations each year.
3. If courses are offered in science, above the academy, then it should have laboratory equipment sufficient for all the experiments called for by such courses—sufficiency to be measured by the value of the apparatus, which shall be, in chemistry not less than \$1,000, in physics not less than \$2,000, and in biology not less than \$1,500.
4. It should have a library of not fewer than 2,000 volumes bearing specifically upon the subjects taught.
5. It should maintain at least five departments, with a professor exclusively in charge of each. In the nature of the case, other teachers would be required. They might be assistant professors or instructors in more than one department each. As speedily as possible such school should go from five to six and seven, and even more, full professors. The library and laboratories should not lag in constant growth.
6. No teacher should be required to do more than 25 hours per week of classroom work.
7. No student should be allowed to do more than 15 hours of classroom work per week on a basis of 60 year-hours for graduation, i. e., as a rule the student should be allowed only one-fourth of his degree work per year, unless a student is a conditioned freshman with only half of his work in advance. A student may take, in addition to 15 hours, a given amount of music or other fine arts.
8. The equipment of the teachers should be approximately equal to that of college teachers.

Junior colleges will be grouped in four classes as follows:

- (1) *Junior Colleges of Class A Plus.*—This class includes institutions which meet in full all the criteria of a junior college as adopted by the college section of the Texas State Teachers' Association. Students from such institutions should receive hour-for-hour credit.
- (2) *Junior Colleges of Class A.*—This class includes junior colleges which approximate the standards set for Class A Plus, but fall short of it in certain particulars. For example, a college which is slightly short of the standard set for the library or laboratory equipment would fall in this class. Students from institutions rated in Class A should receive a maximum of 13 session hours per year, or their work in specified departments may be discounted, as noted in the rating of the individual institution.
- (3) *Junior Colleges of Class B.*—This class includes junior colleges which, while of collegiate character and standards, fall short in more important particulars of the standards set for Class A Plus. Students from institutions rated in Class B should receive approximately three-fourths credit up to a maximum of 11 session hours per year, except in specific departments, as may be noted in the rating of the individual institution.
- (4) *Junior Colleges of Class C.*—This class includes junior colleges which, while organized and designated as colleges, appear to be in reality little better than secondary schools. Students from institutions of Class C should receive, in departments to be specifically designated in each case, approximately one-half credit up to a maximum of $7\frac{1}{2}$ session hours per year.

(Classes A Plus and C are vacant.)

CLASS A.

Ablene Christian College,¹ Abilene.
 Alexander Collegiate Institute,² Jacksonville.
 Burleson College,³ Greenville.
 Clarendon College,¹ Clarendon.
 Meridian College,³ Meridian.
 Decatur Baptist College,¹ Decatur.
 North Texas Female College,¹ Sherman.
 Saint Mary's College,¹ Dallas.
 San Antonio Female College,¹ San Antonio.

Stamford College,⁴ Stamford.
 Texas Military College,¹ Terrell.
 Thorp Spring Christian College,¹ Thorp Spring.
 Wesley College,³ Greenville.
 Westminster College,¹ Tehuacana.

CLASS B.

Goodnight Baptist College,¹ Goodnight.
 John Tarleton College,² Stephenville.
 Midland College,¹ Midland.

VIRGINIA.

An institution to be registered as a junior college by the State Board of Education of Virginia must present satisfactory evidence that it is doing at least the freshman and sophomore work of a standard college. The junior college may confer a diploma of graduation, but shall not confer any titled degree.

Daleville College, Daleville.
 Marion College, Marion.
 Mary Baldwin Seminary, Staunton.
 Southern College, Petersburg.
 Stonewall Jackson College, Abingdon.

Sullins College, Bristol.
 Virginia College, Roanoke.
 Virginia Interment College, Bristol.
 Virginia Union University (colored), Richmond.

WASHINGTON.

The University of Washington allows college credit for the fifth-year work of the Everett High School, when the work corresponds with courses in the university.

ASSOCIATION OF COLLEGES AND SECONDARY SCHOOLS OF THE SOUTHERN STATES.

By-law 6 of the association provides as follows:

To be accepted as a member of this association a junior college must meet the following conditions: The college work must be the essential part of the curriculum, and names of college students must be published separately; requirements for admission to college classes must be as in by-laws 3 and 4;¹ requirements for graduation must be based on the satisfactory completion of 30 year hours of work corresponding in kind and grade to that given in the freshman and sophomore years of colleges belonging to the association; the junior college shall not confer a degree, but may award diplomas; the number of teachers, their training, the amount of work assigned them, the number of college students, the resources and equipment of the college are all vital factors in fixing the standard of an institution and must be considered in accepting a junior college for membership. On these points the executive committee shall make regulations, and compliance therewith shall be a condition essential to their recommendation.

¹ No science approved.

² Chemistry only science approved.

³ Chemistry and physics only sciences approved.

⁴ Physics only science approved.

⁵ See p. 65.

DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1917, No. 18

HISTORY OF PUBLIC SCHOOL EDUCATION IN DELAWARE

By STEPHEN B. WEEKS
BUREAU OF EDUCATION



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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, January 2, 1917.

SIR: Legislative and executive officers, teachers, and citizens in the State of Delaware are now cooperating as they have not done before for the advancement of public education and the improvement of public schools in that State. For some time this bureau has been cooperating with the State commissioner of education and others in this movement and has begun a survey of education of the State which will now be continued by and under the direction of a commission created by act of the legislature at its recent session. As a part of this general survey and as a background to the study of present educational conditions in the State, I recommend the publication of the accompanying manuscript on the *History of Public School Education in Delaware*. It has been prepared at my request by Stephen B. Weeks, of this bureau.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR

ACKNOWLEDGMENTS.

The author of this study wishes to acknowledge with thanks the many courtesies that he has enjoyed at the hands of citizens of Delaware. The Hon. James H. Groves, first superintendent of free schools of the State of Delaware, the Hon. Henry C. Carpenter, assistant secretary, and Dr. Charles A. Wagner, the first commissioner under the reorganization of 1913, have read the manuscript and made valued suggestions. Information has also been courteously furnished by Mr. Clifford J. Scott, superintendent of the city schools of Wilmington; by the Hon. George S. Messersmith, formerly secretary of the State board of education and now United States consul at Curaçao, West Indies; and by the Hon. Henry C. Conrad, judge of the supreme court of Delaware; while the detailed and accurate History of Education in Delaware by the Rev. Lyman P. Powell, D. D., LL. D., now president of Hobart College, has been always a valued guide and a constant source of inspiration and delight.

S. B. W.

HISTORY OF PUBLIC SCHOOL EDUCATION IN DELAWARE.

Chapter I.

COLONIAL GROWTH AND DEVELOPMENT.

I. ORIGINAL SETTLEMENTS: THE SWEDES, THE DUTCH, AND THE ENGLISH.

The territory known at the middle of the seventeenth century as New Netherlands extended from the Hudson (or North River) to the Delaware (or South River). The first settlements in what is now the State of Delaware were made by the Dutch and the Swedes. In actual attempts at settlement the Dutch took precedence. David Pieterszen de Vries, toward the close of 1630, embarked in person with a company of about 30 adventurers, who commenced a settlement the next year on the South, or, as it is now called, the Delaware River, near the present site of Lewes. "'The voyage of De Vries,' says the eloquent and exact historian of the United States,¹ 'was the cradling of a State; that Delaware exists as a separate Commonwealth is due to the colony of De Vries.'"

Such was the sentiment of students of two generations ago. Those of the present are in close accord with this conclusion. Says Rt. Rev. Frederick J. Kinsman, Bishop of Delaware, in an address delivered on occasion of the Hudson ter-centennial in 1909:

It is, nevertheless, unmistakably true that there is nothing in history more peculiarly Delawarean than Delaware's early connection with the Dutch. Two facts make this especially evident: First, the great river from which our State takes its name, the South River of New Netherlands, was made known to the civilized world through discoveries of a Dutch expedition; and, second, the Dutch settlement at Swaanendael [Lewes] in 1631 was indirectly the means of Delaware's becoming an independent colony and Commonwealth. Had the followers of De Vries never spent those few months preceding their massacre at this spot, we should all now be citizens of Maryland, and all that has made Delawarean history must have assumed a different aspect and have lost its distinct character.²

But it was not given the Dutch to make their first colony on the South River a permanent one, for when De Vries returned to the

¹ Bancroft's History of the United States, orig. ed., II, 281.

² See the introductory note to Gerard Troost's translation of the Voyages of David Pieterszen de Vries (Hoorn, 1655), printed in the Collections of the New York Historical Society, 2 series, vol. 1, 1841, p. 245. For other volumes of documents bearing on the early history of Delaware, see: Documents Relating to the Colonial History of New York, vol. 12, n. s. 1 (Albany, 1877); Papers Relating to the Colonies on the Delaware, 1614-1682, in Pa. Archives, 2 s., vol. 5 (Harrisburg, 1877); and Narratives of Early Pa., N. J., and Del., ed. by A. C. Myers (N. Y., 1912).

³ See the Celebration of the 300th Anniversary of the Landing of the De Vries Colony at Lewes, Del., Sept. 22, 1909. Del. Hist. Soc. Publications, No. 54.

Delaware in 1632 he found his colony destroyed and the site laid waste, without a solitary survivor to make known their fate. It was sufficiently apparent, however, that this had been the work of the neighboring Indians, and after endeavoring for some time to ascertain the perpetrators of the tragedy, De Vries sailed to the New Netherlands, and Dutch settlement of Delaware territory was for a time at an end.

While De Vries made the first attempt at actual settlement, another Dutchman had, at a still earlier date, looked toward the Delaware as a source of trade and commerce. Willem Usselinx, a Hollander, a native of Antwerp, had proposed in 1624, to Gustavus Adolphus, King of Sweden, a plan for a Swedish trading company to be extended to Asia, Africa, and America. Usselinx had been connected with the Dutch West India Co. and was able to make extended reports about the country on the Delaware, its fertility, convenience, and other advantages. A Swedish charter, dated December 21, 1624, was obtained; the company was granted privileges, and Usselinx was to have as his share the one-thousandth part of all goods which the company should buy or sell. The plan was recommended by the King to the States; was confirmed by them in the Diet of 1627, and many persons became associated. The company, known as the South or Swedish West India Co., promised to become a rival of the older Dutch West India Co., but the rise of the German war and the death of Gustavus Adolphus at Lutzen in 1632 interfered with and delayed the execution of its plans.

The plans of the South Co. were soon revived, however, by Peter Minuit, another Hollander, who had been director general of New Netherlands under the Dutch West India Co. between 1624 and 1632. Minuit had fallen into disputes with the principals of that company, had been recalled and displaced, and thereupon went to Sweden and revived the propositions of Usselinx. These were received with pleasure by Queen Christina and were patronized by the chancellor and by the wealthy.¹ A colony under command of Minuit, who was most admirably fitted for the work, was sent out in two ships in 1638; land was bought from the Indians on the west side of the Delaware River, extending northward from Cape Henlopen to the falls of Trenton. The colony settled about where Wilmington now is. Fort Christiana was built on the banks of the River Christiana and by this name this settlement, from which was later evolved the State of Delaware, was long known.² It grew by slow accretions from the home country, by the coming of Dutchmen from New Netherlands, and later along with the development of Pennsylvania.

¹ Myers, in *Narratives of Early Pennsylvania*, etc., p. 60, points out that no record confirming the statement that Charles I of England renounced all claims to the Delaware country in 1634 has been found.

² See Acrelius, *Isaac: New Sweden, or the Swedish settlements on the Delaware*, first published at Stockholm in 1759, now translated by Rev. Nicholas Collin and printed in the Collections of the New York Historical Society, 2 series, vol. 1, p. 406 et seq.

The governors of New Sweden on the Delaware were Peter Minuit, Peter Hollaendare, Johan Printz, Johan Papegoja, and Johan Clason Rising. Their rule extended from 1638 to 1655, and their political horizon was filled with constant bickerings with the Dutch who had never surrendered their claims to the territory. But New Netherlands was also weak, and new Sweden managed to maintain its political independence until 1655, when the Dutch came in force and, after gaining a bloodless victory, incorporated New Sweden into their own dominions. Both colonies had long felt the thrust of the English-speaking peoples westward from New England and northward from Virginia and Maryland. The pressure of this common enemy forced Dutch and Swedes to sink their own squabbles in the presence of a common danger, but in 1664 this pressure could be resisted no longer. New Netherlands became New York, and English dominion was unbroken from New England to the Carolinas.

For the time being Delaware was attached to the government of New York, although claimed by New Jersey and Maryland. In 1682, on the organization of the Pennsylvania government, it was granted to Penn to give his province of Pennsylvania an outlet to the sea, and came to be known as "the territories," the "lower counties," or "Delaware Hundreds" of Pennsylvania. They were the cause of much quarreling and political jealousy and gave rise to much popular discontent, for the governmental relations of the two were unsatisfactory. Finally, in 1703, Delaware was reorganized as a separate colony with an assembly of its own, although under the same governor as Pennsylvania. This relationship was maintained till the War of the Revolution and then fell apart of its own weight as a result of the feeling of the times. So much for the political and governmental relations of Delaware down to the date when it became an independent and coequal unit in the Federal Republic.

Delaware is the second smallest State in the Union, having according to the census of 1910 a land area of 1,965 square miles and a total land and water area of 2,370 square miles. The decennial growth of population has been as follows:

Year.	Population.	Rank.
1790.....	59,096	16
1800.....	64,273	17
1810.....	72,674	19
1820.....	72,749	22
1830.....	76,748	24
1840.....	78,085	26
1850.....	91,532	30
1860.....	112,216	32
1870.....	126,015	35
1880.....	146,608	38
1890.....	168,493	43
1900.....	184,735	45
1910.....	202,322	47

In land area and population (1910) the counties range as follows, counting from the north:

	Sq. miles.	Population.
New Castle.....	435	123,188
Kent.....	617	32,721
Sussex.....	913	46,413

In 1910 there were 197,813 native Delawareans living in the United States; of these, 137,131 lived in Delaware and 60,682 lived in other States, of whom 19,779 lived in Maryland and 15,724 in Pennsylvania. In 1900 there were 13,810 foreign-born residents of the State, and in 1910 this number had increased to 17,492. From these figures it may be concluded that at the present time the population of the State is predominant in native stock and essentially homogeneous.

II. EDUCATION AMONG THE SWEDES AND THE DUTCH.

The fortunes of the Swedes were not essentially or materially changed by their conquest by the Dutch, nor did either of these nations find itself wrenched from its old moorings by the succeeding conquest by the English. They continued to live their own life in their own way, without let or hindrance. As early as 1642 and 1643 the Swedes had ministers of their own. There were others before the conquest by the Dutch¹ and we may assume, perhaps with a large degree of certainty, that these ministers were also to a certain extent teachers and in this way kept living the traditions of light and learning which these people had most certainly brought from their old homes. In the course of time the Dutch and the Swedish settlers became much intermingled, but the Swedes gave tone and character to the community.

Says Ferris:

The language of the Dutch had such an affinity to that of the Swedes that their children soon understood the religious service in the Swedes' churches, and freely joined in their worship. The Dutch had no regular ministry among them, whilst the Swedes were careful to maintain public worship as constantly as their isolated situation would admit; and being much the larger portion of the population, especially about Christiana, the rising generation lost their Dutch character and language, so entirely that in the year 1697, Rudman, who had just arrived from Sweden as a missionary, says: "We live scattered among the English, yet our language is preserved as pure as anywhere in Sweden." Several of their writers assure us that their character, manners, and customs, at that time throughout the colonies, remained purely Swedish.²

Thus we see that at the end of the seventeenth century the English had changed but little the life of the original Swedish settlements on the Delaware. Says Powell, in his *History of Education in Delaware*:

The English governor of the province allowed the Swedes perfect freedom in religious and educational affairs. Their economic condition was excellent; there were

¹ Clay: *Annals of Swedes on Delaware*, ed. 1858, p. 33.

² Ferris, Benjamin: *History of the Original Settlements on the Delaware* (Wilmington, 1846), pp. 100-110, quoting first edition of Clay's *Annals of the Swedes on the Delaware*. See also Phila. edition of Clay, 1858, p. 62.

no poor among them. The Indians, far from attacking them, clamored for peace and the catechism. All circumstances, indeed, save three, conspired to promote education. These were the want of books, of schoolmasters, and of schoolhouses.

It was to obviate some of these difficulties that the Swedes at the end of the seventeenth century asked to be taken under the religious care of the church in Sweden. In response to that request and by the King's special order, pastors were sent out from Sweden to preach to them their own particular forms of religious belief and in the Swedish tongue. With these ministers were sent Swedish books, Bibles, catechisms, hymnals, and similar aids to the spiritual life. We know that at least one of these ministers established a school, and it is safe to say that what formal teaching there was in the colony was under their direction and control. This Swedish mission to settlers on the Delaware did not terminate till the death of Rev. Nicholas Collin in 1831.

Little is known of the real educational condition of the colonists during the Swedish and Dutch régime and how extensive were the changes wrought by the coming of the English. There were of course no public schools in the modern use of the term. Such schools as existed were either private or church or more likely were private under church supervision and direction.

It is perhaps possible to arrive at a safe estimate of what was probably the educational situation in the seventeenth and eighteenth centuries in Delaware by taking a brief review of the educational situation in the countries from which the settlers had recently come. Such a review is furnished by Wickersham in his *History of Education in Pennsylvania*.

According to Wickersham, in the seventeenth century the Dutch and the Swedes were both far ahead of the English in matters of education. In writing of these early Swedish and Dutch settlements on the Delaware in what are now Pennsylvania and Delaware, he remarks that at the time the first Swedish colony was planted on the Delaware there was no regular system of public education in Sweden, but that the church was active in its efforts to educate the young and home instruction was general. He continues:

Holland was, without doubt, the first country in Europe to establish a system of public schools, similar to the schools now known by that name. The work was begun under the Prince of Orange, in the latter part of the sixteenth century. * * * It was during their 12 years' sojourn in Holland, without doubt, that the Pilgrim Fathers obtained the germs of that system of education which has made New England so famous in our educational history, and it was in Holland too, almost certainly, that William Penn learned those broad principles of educational policy that are embodied in the frame he constructed for the government of his province and that he endeavored to have incorporated into laws for the benefit of the people.¹

¹ Wickersham, J. P.: *History of Educ. in Pennsylvania*, pp. 3-5.

Wickersham then makes the proper application to the situation on the Delaware in the seventeenth century:

Let no one expect to find well-organized schools and skilled teachers, for this mere handful of people in a wilderness, 3,000 miles from home and help, had to win the battle for existence before they could give much attention to the arts that cultivate and refine; but to such as have the patience to follow the narrative, it will appear that efforts greatly to their credit, under the circumstances, were made to instruct their children in the elements of common learning and to acquaint them with the essentials of Christianity.¹

He continues:

The churches no doubt served the place of schoolhouses in the early days, and the clergymen so far as they were able filled the double office of preacher and teacher. Two hundred years ago churches and schools were generally under one control in Sweden, Holland, and other European countries, and the schoolmaster was nearly always the minister's assistant, reading for him, leading the singing, visiting the sick, and in his absence taking the vacant place at the sacred desk. These customs were brought to America, and it may be safely said that so far as the early settlers on the Delaware had churches they had schools, and so far as they had ministers they had schoolmasters. * * * It was clearly impossible, however, that children living many miles distant from the churches * * * could be gathered for instruction frequently or regularly into the three or four places of worship which the colony afforded. Necessarily, therefore, the ministers and their assistants visited families as far as practicable, and, in conjunction with parents, taught the young what they could, at least to read and write and recite Bible lessons and the catechism. This plan of home instruction came early to the Swedes, for it was practiced very largely in the thinly settled portions of the mother country, and has not been discontinued even at the present day. When, therefore, there was a want of clergymen, there was a want of schoolmasters, and a dearth in religion was followed by a lapse into ignorance.²

In this review Mr. Wickersham points out what was to be expected from people who had such antecedents as had the Swedes and the Dutch in the seventeenth century. In his *History of Education in Delaware*, Rev. Lyman P. Powell, now president of Hobart College, New York, has gathered together from the scattered sources what was actually accomplished by these people in the matter of schools and his study is here briefly summarized.

The first Swedish schoolmaster who emerges from the mists of the past is Sven Colsberg, who in 1699 was engaged as bell-ringer at Christiana, and as the salary of that office was insufficient, to his other duties was added that of teaching and on the "10th of June, in the name of the Lord, Sven Colsberg began his schoolkeeping for a half year at the above-named place." In 1716 Arvid Hernbohm, "quiet and capable," then master at Wicaco, in what is now Philadelphia, was invited to Christiana where he was promised "honorable and satisfactory support." But Hernbohm declined. Johan Gioding came in his place and the school was opened in Johan Gustafsson's house June 17, 1717. The pastor was present with as many of the par-

¹ Wickersham, J. P.: *History of Educ. in Pennsylvania*, pp. 2-3.

² *Ibid.*, pp. 15-16.

ents as could attend; he examined the children as to their proficiency and then recommended them to their teacher. A year later Mr. Gioding held a public examination of his pupils.

He asked questions regarding the most important Christian doctrines, requiring proof from Holy Scripture, to which questions of Mr. Gioding, to the surprise and gratification of all, they answered promptly and boldly, and so quickly confirmed their answers by a text of Holy Scripture that all the company present could not refrain from glorifying God with tears of joy and gladness for their children's quick memory and attainments and the schoolmaster's diligence and circumspection.¹

It appears that the burden of supporting Swedish schools now increased to such an extent that none were kept between 1722 and the coming of Acrelius in 1749. The children were sent to English schoolmasters, who taught them simply to read, but Acrelius urged upon his congregation the importance of preserving the Swedish language in its purity as it had then (about 1750) "very much fallen out of use," and under his leadership Nils Forsberg, a student from the University of Lund who had recently arrived, was employed as a sort of traveling educational missionary. Moving from house to house, he took up his temporary abode with first one family and then another and in this way instructed their children.

In summarizing the whole educational system among the Swedes in Delaware during the colonial period, Powell says:

The protracted struggle for separate and distinct Swedish schools was abandoned before the Revolution, and their subsequent history was merged into that of the Lutheran and Episcopal Churches. The reason for this is not far to seek. After the coming of the English in 1682 many of the Swedes began gradually to drop their native speech. Education in the Swedish language declined, and it became customary for Swedish children first to learn English and then the tongue of their fathers. Acrelius said that all children in his day could read English, write, and cipher. More attention was doubtless given to reading than to writing, particularly in the early period, for many made their mark instead of signing their names to documents. House instruction by the pastor was the last flickering light of education among the Swedes.²

With the Dutch the evidence for schools is still more scanty than for the Swedes. The first provision made by the Dutch for education in what is now Delaware seems to have been the offer by the city of Amsterdam in 1656 to settlers on Delaware River to "send thither a proper person for schoolmaster, who shall also read the Holy Scriptures and set the Psalms." The city of Amsterdam was "until further opportunity" to provide his salary. It was also required that at New Amstel (now New Castle) "a house for a school, which can likewise be occupied by a person who will hereafter be sexton, psalm setter, and schoolmaster" should be erected, but we have no record that such schoolhouse was really built or that one existed in the colony of Delaware before 1682. There are, however, records

¹ Powell, L. P.: *History of Educ. in Delaware*, p. 18.

² Powell, p. 20.

of Dutch schoolmasters in the colony, and some of their names have come down to us, including Evert Pietersen, Arent Eversen Molinaer, Abenius Zetscoven, and Andreas Hudde.¹

III. EDUCATION AMONG THE ENGLISH SETTLERS BEFORE THE REVOLUTION.

A modern writer, Right Rev. Frederick J. Kinsman, Bishop of Delaware, has emphasized the differences between the Dutch and the English by saying that, while the Dutch cared comparatively little for education as contrasted with the New Englanders, they cared more for the amenities, comforts, and graces of social life.² But Dr. Wickersham says:

As a social or political force the Swedish and Dutch settlers on the Delaware were scarcely felt after the arrival of Penn. They were soon surrounded by a more positive, more pushing, better educated class of men, and few of them came forward to take advantage of the new and broader field of effort that opened before them. They remained good, loyal citizens, working quietly on their farms or in their shops, and at times serving with apparent reluctance and in small proportion to their numbers, as local officers, on juries, or in the legislative assemblies of the province. In their descendants they gave the State some of its most worthy citizens and illustrious names.³

This judgment is not contrary to the conclusions formed by Powell and other authors who have been quoted already. In the seventeenth century the Dutch learned Swedish and tended to forget their own tongue; in the eighteenth century the Swedes "who became separated from their countrymen or who mingled little with them after the coming of the English, soon lost the use of their native tongue and were absorbed by the swifter currents of social and religious life into which they were thrown."⁴ They began to teach their children English even before they learned their mother tongue, and all the evidence goes to show that long before the Revolution the English were the predominant element in the population.

What then did the English do for popular education in the pre-Revolutionary period? Previous to the coming of Penn, indeed from 1640 on, isolated English families, some from New England, others from Maryland and Virginia, had attempted to settle along the Delaware, but while they were generally repulsed by the stronger Swedes and Dutch, they were not expelled; they gradually grew in power and even under the administration of Delaware as a part of New York some provisions had been made looking toward education, as will be seen by an examination of the laws promulgated by the

¹ Powell, L. P.: *History of Educ. in Delaware*, pp. 24-25.

² Bishop Kinsman's address in *Publications Del. Hist. Soc.*, No. 54, p. 10.

³ Wickersham: *History of Educ. in Pennsylvania*, p. 19.

⁴ Wickersham: *History of Educ. in Pennsylvania*, p. 79. In certain isolated settlements like "Wicaco, Kingessing, and Upper Merion, all near Philadelphia, they continued to speak the Swedish language for 150 years after this first settlement." It was this that made possible the continuation of the Swedish mission down to 1831.

Duke of York. But with the coming of Penn in 1682 the English came at once into greater prominence than they had ever occupied before in the province, and Penn's Frame of Government, thanks to his enlightened association with the Dutch in Holland, contained a provision that "the Governor and Provincial Council shall erect and order all public schools and encourage and reward the authors of useful sciences and laudable inventions;" it laid the foundations for industrial education also by providing that all children of the age of 12 should be taught "some useful trade or skill, to the end none may be idle, but the poor may work to live, and the rich, if they become poor, may not want."¹

The laws passed by the Assembly of Pennsylvania in 1682 and 1683 indicate the intention to provide immediately for the establishment of public schools and for the introduction of industrial education in accord with the ideas of Penn. Universal education was clearly contemplated, and had this been accomplished for Pennsylvania we may safely assume that Delaware would have received equal benefit. But the good work, educationally speaking, thus inaugurated under the direction of William Penn, did not long continue. A do-nothing policy was soon in the ascendant. Says Wickersham:²

The provincial authorities of Pennsylvania, as has already been stated, did next to nothing to promote the cause of general education during the long period from the beginning of the eighteenth century to the end of their rule in 1776. Charters were granted to a few educational institutions, some laws were passed securing to religious societies the right to hold property for school purposes, and in special cases enabling them to raise money by lottery to build schoolhouses; but this was all. Penn's broad policy respecting public education was virtually abandoned. Intellectual darkness would have reigned supreme throughout the province had not the various churches and the people themselves been more alive to the importance of the subject than the government.

What actually happened to Pennsylvania also happened to Delaware. The government itself did nothing. What was done was the work in the main of private denominational activity. In this work the Quakers and the Episcopalians led.

Before 1686 Christopher Taylor, a classical scholar and a Quaker minister, founded a school on Tinicum Island, where Gov. John Printz had established his headquarters and which is now in Pennsylvania. Taylor refers to the island as "Tinicum, alias College Island." It does not appear that the Quakers established any school in Delaware before the one at Wilmington in 1748. This school has had a continuous existence to the present time.³

The efforts of the Quakers had been anticipated by the representatives of the Church of England, to whom, through the venerable Society for the Propagation of the Gospel in Foreign Parts, is given

¹ See Thorpe, F. N.: *Federal and State Constitutions*, vol. 5, p. 3062.

² *History of Educ. in Pennsylvania*, p. 78.

³ Powell, L. P.: *History of Educ. in Delaware*, pp. 30-32.

the honor of making education universal throughout the State of Delaware,¹ for the efforts of the Quakers were mostly confined to the northern section of the colony. In 1705 Rev. George Ross was sent by the society as a missionary to New Castle, where he remained for many years. The importance of education was ever before his mind. In 1711 the vestry petitioned the society for a schoolmaster. But none seems to have been sent, for in 1729 Ross himself petitioned the authorities in England that "a small salary of £6 per annum may be allowed to a catechist or schoolmaster in this place to encourage his instructing youth in the church catechism." The business of education was at that time in private hands and was conducted by a different class of teachers. In a history of his church Mr. Ross has this to say as to the conditions of education in 1727:

There are some private schools within my reputed district which are put very often into the hands of those who are brought into the country and sold for servants. Some schoolmasters are hired by the year, by a knot of families who, in their turns, entertain him monthly, and the poor man lives in their houses like one that begged an alms, more than like a person in credit and authority. When a ship arrives in the river it is a common expression with those who stand in need of an instructor for their children, "Let us go and buy a schoolmaster." The truth is the office and character of such a person is generally very mean and contemptible here, and it can not be otherwise 'til the public takes the education of children into their mature consideration.²

Missionaries were sent from time to time to other sections of the colony, but it does not appear that they at any time engaged in the formal work of education, although devoting much time to instructing the people in the use of the liturgy, in catechising the children, and in similar work that lies on the borderland between simple religious instruction and formal teaching. Says Powell at the end of his review of the work of the Society for the Propagation of the Gospel:

Brief as is this sketch of the society and its work in Delaware, it includes all that the records have revealed, and suffices to establish the society as the most important agent in the State at large in the last century for the propagation of education as well as the gospel. Moreover, it is equally clear that New Castle and Dover, whither missionaries were first sent, became the Iona and the Lindesfarne of this little Teutonic commonwealth, for they sent forth missionaries to its remotest bounds.³

There were individual private schools taught at various times during the colonial and revolutionary period, some of whose teachers attained to a local celebrity which has handed down their name and fame to the succeeding generations. One of these was John Thelwell, a schoolmaster famous in Wilmington during revolutionary days; another was Mrs. Elizabeth Way, a celebrated teacher of needlework in 1790, under whose instruction "the art of shirt making was strictly attended to, and fitting and cutting was taught here with neatness

¹ For an extensive study of Dr. Thomas Bray, the founder of the S. P. G. and his work in Maryland, see Dr. Thomas Bray: His life and selected works relating to Maryland, edited by Bernard C. Steiner (Baltimore, 1901).

² Powell, pp. 36-37, quoting Perry's Hist. Colls. Relating to the Amer. Col. Ch., V., p. 47 et seq.

³ Powell, L. P.: History of Educ. in Delaware, p. 38.

and care." In 1748 the Quakers established their Friends' School in Wilmington, which has had a continuous existence since that time. The old academy of Wilmington was built about 1765, and instruction in it was begun before the Revolution. The object of the academy was declared to be to promote "religion, morality, and literature," and in 1786 a formal curriculum of studies was drawn up and adopted which mark it as a classical academy of the orthodox type. Particular stress was laid on Latin, Greek, and mathematics, but English was not neglected, showing that the institution was ahead of its time. As the life of Wilmington became more normal after the close of hostilities, the school facilities became more abundant, some of them being conducted by men who later became famous in other lines, the best known being the celebrated political writer, William Cobbett, publisher of *Porcupine's Gazette*, and Lewis Cass, candidate for the Presidency in 1848.

The educational history of Wilmington during the early days is that of other cities, *mutatis mutandis*. It has been seen how the city of Amsterdam sent a teacher to New Castle as early as 1657; the comments of Missionary Ross on the educational situation in 1727 have been quoted, and it was from New Castle as a center that the Presbyterians of New Castle Presbytery in days long before the Revolution sent forth a stream of missionaries to the old South who laid in the States to which they were sent the foundations of denominational schools from which came later by evolution the public schools of to-day. As early as 1738 the Presbytery of Lewes laid the foundation for Delaware College. In the absence of an organized public-school system, other towns organized for themselves, and independently of the State, schools that had more or less of municipal direction and care if not support, but, as they were in reality private schools, no further consideration of their work is necessary in this study. Suffice it to say that from the time of the Revolution, and in some cases before that date, private schools began to be founded in most of the towns and villages of the State and furnished fair opportunities for education to those who wished and who could pay for its privileges. The curious reader who is interested in this subject will find a fuller presentation in Powell's *History of Education in Delaware*, where there has been brought together from various sources the scattered material extant relating to this interesting subject.¹

The conclusion of the whole matter seems to be that, as far as education was concerned, this was available to a greater or less extent during the whole of the colonial period to all who had the ambition to desire it, the energy to seek it, and the money with

¹ See also Scharf's *History of Delaware*, II, 683-696 (1888); Elizabeth Montgomery's *Reminiscences of Wilmington* (written in 1851); Ferris's *History of the Original Settlements on the Delaware* (1846); Wick-ersham's *History of Education in Pennsylvania* (1886).

which to pay for it. During the Swedish and Dutch periods education was in the hands of the church. Religion and education had not been clearly differentiated. The minister or his assistant served also as the teacher. Under favorable conditions the children were gathered for instruction, but where conditions were unfavorable the teacher visited the homes of the children. As the Dutch language in Delaware made small progress against the Swedish, so the Swedish soon began to lose ground against the more progressive and aggressive English. The government of Penn even started out with the promise of government-supported schools but later failed to make good its promise, and during the eighteenth century the educational institution on which the people found it necessary to place their main reliance was the private school, generally under church direction or with denominational support. These grew up from time to time in the leading towns of the province and served the purpose of giving some of the people the elements of an education which was of the prevailing classical and cultural type, but in which the government as such had no part. The educational opportunity of the State did not come till after the dawn of independence.

Chapter II.

THE FIRST ATTEMPTS AT STATE EDUCATION.

I. THE STATE SCHOOL FUND PERIOD, 1796-1829.

There is nothing on the subject of education in the Delaware State constitution of 1776.

A second State constitution was framed by a convention which met in New Castle in June, 1792. It was put into operation without being submitted to the people. This constitution has one reference to education:

The legislature shall, as soon as conveniently may be, provide by law * * * for establishing schools, and promoting arts and sciences.¹

It does not appear that there was any immediate action in recognition of this mandate of the organic law. No law was immediately passed, nor does it appear that the governors of the State in their messages to the general assembly made any reference in those years to the subject of education.

In 1796 the State took its first step toward meeting the instructions of the constitution of 1792.

On February 9, 1796, there was passed an act for the creation of a school fund which became the basis of the public school system of Delaware and which has been of preeminent importance in shaping the policy and giving tone to the administration of schools.

The act of 1796 provided that all the money accruing from marriage and tavern licenses, from 1796 to January 1, 1806, should be appropriated and known as "The fund for establishing schools in the State of Delaware." The State treasurer for the time being was constituted its guardian, under the name and style of "The trustee of the fund for establishing schools in the State of Delaware." He was authorized to receive gifts, donations, and bequests from individuals to whom the faith of the State was pledged. When the money in hand was sufficient, the trustee was to invest it in shares of stock of the Bank of Delaware, the Bank of the United States, the Bank of Pennsylvania, or the Bank of North America, and with the dividends arising therefrom to purchase other shares. He was to make an annual settlement with the general assembly and once a

¹ Art. VIII, sec. 12, constitution of 1792. See Thorpe's charters and constitutions, vol. 1, p. 580. The section was carried over, without change, into the constitution of 1831, where it becomes Art. VII, sec. 11. See Thorpe, I, p. 506.

year publish a list of the gifts received, with the names of the donors. The fund itself, at some time in the future, date not specified, was to be applied to the establishment of schools in the hundreds of the counties "for the purpose of instructing the children of the inhabitants thereof in the English language, arithmetic, and such other branches of knowledge as are most useful and necessary in completing a good English education," but it was further provided that the fund should not be applied "to the erecting or supporting any academy, college, or university in this State."¹

On January 24, 1797, an act supplementary to the school fund act of February 9, 1796, was passed. This act ordered the school trustee (the State treasurer) to sell the three shares of stock of the Bank of Delaware already acquired and apply the receipts, together with any other moneys he might then have in hand or receive, to the purchase of the shares of the stock of that bank reserved for the State by the act of incorporation. It was also enacted that the money arising from marriage and tavern licenses should be first applied to the payment of the chancellor and judges,² and then the remainder was to be appropriated for the establishment of schools. The money thus appropriated to the payment of the chancellor and judges was evidently intended as a temporary loan to tide over any distress in the State treasury, for the sum thus used was to be replaced by money accruing to the State from arrearage taxes.³

Between 1797 and 1806 there seems to have been no further legislation on the subject of the school fund. In 1806 the act of 1796 and the supplementary act of 1797 were extended for seven years from January 1, 1806;⁴ on January 27, 1813, they were again extended to January 1, 1820;⁵ on February 8, 1822, they were revived and continued in force "until repealed by law," and it was further ordered that the moneys which would have belonged to the school fund had the act been in force in 1820, 1821, and 1822 were to be reckoned up and invested in bank stock for the benefit of the school fund.⁶

Such is a summary of all the legislation in Delaware bearing on the school fund during this period. It is now proper to turn to an examination of the efforts to make it of service. The first proposed use of the accumulating school fund was in 1803, when the inhabitants of Glasgow presented a petition for authority to establish a school and for help from the fund. The legislative committee to whom the

¹ Powell's History of Education in Delaware, 139. The act itself is ch. 105c, Laws of Delaware, II, pp. 1296-1298.

² This had been the law from 1793 to 1796. See laws of 1793, ch. 28c, secs. 4 and 5. Laws of Delaware, II, p. 1127. It would appear then that the law of 1797 was merely a return to the earlier form of procedure.

³ Powell, p. 139, quoting Laws of Delaware, II, p. 1362 et seq., and VI, p. 327. See also ch. 133, Laws of Delaware, 1797, pp. 47-50. The moneys received from the trustees of the Loan Office and from the sale of vacant lands were to be invested in bank stock also, but "such shares, so subscribed, shall not be deemed or taken as any part of the fund for establishing schools in this State."—Sec. 5, ch. 133.

⁴ See ch. 24, Laws of Delaware, 1806, IV, p. 52.

⁵ Ibid, 1813, IV, 596.

⁶ Laws of 1822, ch. 144, p. 241.

appeal was referred recommended that they have leave to bring in the desired bill, but thought the fund was then "too inconsiderable for a general application" and that a grant from the fund would therefore "neither meet the wishes of the public, nor be consistent with the establishment" of the fund.¹ The bill was apparently not brought in; at any rate no such bill became a law.

In a letter to Henry Barnard in 1865 Judge Willard Hall gives an insight into the condition of education in the State at the time these earliest efforts toward a State system were being made:

In 1803, April, I came to Delaware and settled at Dover. There was then no provision by law in the State for schools. Neighbors or small circles united and hired a teacher for their children. There were in some rare places schoolhouses. There was no schoolhouse in Dover. The teacher there in 1803 was a foreigner who hired a room and admitted scholars at prices. The teachers frequently were intemperate, whose qualification seemed to be inability to earn anything in any other way. A clergyman who had some pretensions as a scholar, but had been silenced as a preacher for incorrigible drunkenness, stood very prominent as a teacher. In the best towns it depended upon accident what kind of a school they had. In Wilmington at one time they had a very good teacher; he made teaching respectable, and interested parents in the instruction of their children. In Dover we sent to Harvard College in 1813 and procured a teacher who was with us several years. Afterwards we were left to chance, but fortunately generally had a good school. But even in the best neighborhoods, teachers of the young frequently were immoral and incapable; and in the country generally there was either a school of the worst character or no school at all.²

The first official recognition of the cause of public education by the governor of the State seems to have been that contained in the message of Gov. David Hall to the assembly on January 4, 1805.³ He says:

When we take into view the gross ignorance that prevails in some parts of this State among the lower classes of the people, for want of proper schools established in their neighborhood, we lament that the legislature has not paid a more early attention to this important duty. A law having passed in 1796 to create a fund sufficient to establish schools in this State and the fund at this time being considerable, I beg leave to recommend the application of such part of the said fund as the legislature shall judge proper to the establishment of schools as in the said act directed.

Two weeks later, on January 17, 1805, we find the following in the journal of the house (p. 36). Its very brevity speaks with startling emphasis:

Mr. Higgins laid on the table sundry petitions, signed by 256 inhabitants of New Castle and Sussex Counties, praying the legislature to pass an act to enable trustees to open schools and to appropriate the school funds, which were read.

On motion of Mr. Higgins, seconded by Mr. Reynolds, that the said petitions be referred to a committee of three.

On the question, it was determined in the negative.

On motion of Mr. Higgins, seconded by Mr. Green, the petitioners had leave to withdraw their petitions.

¹ H. J., 1803, p. 44.

² Barnard's *Jour. of Educ.*, 1866, xvi, 129, quoted in part in Powell, 142.

³ H. J., 1805, p. 8.

This and nothing more. The first effort to pass a school law had failed.

Gov. Nathaniel Mitchell, in his message to the assembly on January 8, 1807, says:¹

The state of our finances has gradually improved; * * * we are flattered with the prospect of realizing the expectation of the legislature, in establishing funds competent to the support of public county schools. This institution deserves encouragement. Ignorance is the bane of our Government. General information is its strongest pillar.

But at this session no petition for schools was presented; no bill was introduced, and on February 5, 1808, the trustee of the school fund was instructed to invest all funds on hand in shares in the Farmers' Bank of the State of Delaware.²

For the next few years there was silence in Delaware on the subject of education. Indeed for the whole of these decades, short and simple are the annals of education, and what legislation does appear is mainly devoted to private institutions. A summary of these provisions may be properly included here: In 1810 the Dover Academy was incorporated; in 1811 permission was granted to raise by lottery \$10,000 "for the use and benefit" of the trustees of the college of Wilmington; the next year the Georgetown school in Sussex County was incorporated, as was the New Castle Library Co.; and the Glasgow Grammar School was authorized to raise \$1,000 by lottery; in 1813 the "English schoolhouse" in Newark was to be repaired out of the proceeds of a lottery that was also to go in part to paving the streets of the town. In 1815 the Union School in New Castle Hundred and the Brandywine Academy in New Castle County were incorporated. Two acts for lotteries to aid education were passed in 1816 and these were followed by other acts of incorporation in 1819 (Milton and Seaford Academies).

On January 7, 1813, Gov. Joseph Haslet said to the assembly:

The school fund is also a subject for your consideration. The establishment of this fund must have been for general use, not for the erection of large and expensive seminaries, in the benefits of which very few can participate. A diffusion of knowledge is a principal concern in every republican government, whose great object is that each citizen may be able to come forward in public life, and avail himself of, and benefit society by, the exercise of those talents with which nature may have endued him. A man possessing the rudiments of education may improve himself by his own assiduity. Some of the greatest characters have made themselves in this way. The want of the rudiments of education has kept in obscurity many who would otherwise have been extensively useful and has lost to the world abilities which might have been its greatest ornament. The income of the school fund is now such, that it is believed, without exhausting the whole of this income, but leaving the fund gradually to increase, appropriations might be made, which with such aids as the different neighborhoods in this State might easily and would readily afford, would establish, for limited seasons, schools in these neighborhoods sufficient to teach the rudiments of education.

¹ H. J., 1807, p. 11.

² H. J., 1808, p. 108.

As it is reasonable that the present generation should not live exclusively for posterity, but should avail itself of the advantages which it possesses for its own improvement, I submit to you the propriety of appropriating a portion of the income of this fund to the purpose above suggested.¹

Gov. Haslet returned to the subject at the next session and said on January 5, 1814:

The importance of education in a republican government is universally acknowledged. In this Government, all the citizens have equal rights; and are under equal obligations. Education confers the power of exercising these rights, and discharging these obligations to the greatest benefit of the individual and of the community. Good schools can not be extensively established without public assistance. I submit it to your consideration whether a portion of the income of the school fund could not be usefully employed in establishing schools in the different neighborhoods of the State, for limited periods in each year. Such a system would be attended with most important advantages; and in carrying it into effect the legislature might confidently rely upon contributions of the neighborhoods in which schools should be established, which would be increased as the benefits of the system became better known and more sensibly felt.²

It is evident that the plan of procedure in the mind of Gov. Haslet was that of a system of education where a part of the expenses were met out of the income of the school fund and the remainder by the people, presumably in their private and individual capacity, but nothing was done that year nor in 1815. In 1816 a resolution recited that the trustee of the school fund then had on hand \$4,753.72, which was lying idle and instructed him to invest the same in the Farmers' Bank of the State of Delaware, "or any other incorporated bank of this State."³

II. THE BEGINNING OF SCHOOL LEGISLATION.

The general assembly of 1817 was the first to undertake the work of the actual organization of a public school system. It had already chartered various private academies and semipublic charity schools for "destitute orphans" in Wilmington and in New Castle, but these had asked no public funds for their maintenance, and none had been provided for them. This assembly had also inaugurated the policy of incorporating Sunday schools, but its most important educational work was the passage of an act—the first public act of its kind in the history of the State—for "appropriating part of the school fund for the education of poor children." This act appointed a board of trustees "to superintend the education of poor children within their several hundreds, in the respective counties of this State." The trustee of the school fund was then ordered for the year beginning February 1, 1817, to pay in quarterly payments to the treasurer of each county the sum of \$1,000 per annum from any money in his hands. The amount available for each hundred was carefully fixed

¹ H. J., 1813, pp. 30-31.

² H. J., 1814, p. 7.

³ See resolution on pp. 157-158, Laws of Delaware, 1817, and chs. 106 and 113. See also H. J., 1816, p. 139.

in the law, and the school trustees were authorized to expend these sums only—

in the payment of such school masters, or teachers of reading, writing, and arithmetic, as may, by the trustees aforesaid, or a majority of them, within their several hundreds respectively, be intrusted with the tuition and education of poor children; * * * such children as may be obviously unable to receive the rudiments of an English education from any private or other source, except as hereinbefore provided.

The trustees were to make reports—

as to the number, character, and situation of the different schools and schoolhouses, in their respective neighborhoods, also the exact number, name, and ages of all the poor white children within their respective hundreds and their opinions as to the amount of money required to pay for their tuition together with such other particulars as they may deem necessary, to enable the general assembly at their next session, to determine the competency, of the net proceeds of the fund for establishing schools, to defray the expense, which might be incurred by the tuition of all the poor white children within the State.

The trustees were to make their reports to the county treasurers and these were to report to the general assembly.

This was the law which launched the public schools as a clearly marked pauper system.¹ Financial details of the results of the law are not available to any great extent, but the report from Sussex County for 1817 made to the legislature on January 15, 1818, may illustrate the whole:²

Paid to Baltimore Hundred for use of schools.	\$33. 94½
Paid to Broadkiln Hundred for use of schools.	69. 22½
Paid to North West Fork Hundred for use of schools.	38. 33
	<hr/>
	141. 50
Balance in hands of county treasurer unappropriated.	108. 50
	<hr/>
	250. 00
Received from trustee of school fund.	250. 00

The law of 1817 was revised and reenacted on February 3, 1818. The new act began by appointing trustees for each hundred in the State who were "to superintend the education of the poor children within their respective hundreds." Beginning with January 1, 1818, the trustee of the school fund was to pay each county \$1,000 in four quarterly payments, the proportion to each hundred being fixed in the law and devoted to—

the payment of such school masters or teachers of reading, writing, and arithmetic, as may * * * be intrusted with the tuition and education of poor children, * * * such white children as may be obviously unable to receive the rudiments of an English education from any private or other source, except as herein before provided.

¹ Wickersham shows in his History of Education in Pennsylvania, ch. 13, that the course of evolution of this phase of the subject was not essentially different in Pennsylvania from that in Delaware. A similar effort was made in Pennsylvania to educate the poor gratis. In that State more money was spent, the idea persisted longer and met with substantially the same results. There were also experiments with Lancasterian schools.

² House Journal, 1818, pp. 37-38. On pp. 23-24 is a statement that from September to December, 1817, there was paid out on orders from the trustees of the various hundreds a total of \$335.

The limit for three months' instruction was fixed at \$2.50 "and a like sum in proportion for any longer or shorter term." The trustees in the hundreds were to keep close and exact accounts of their expenditures and of the children taught and report the same year to the county treasurer who in turn was to report to the general assembly.

The local trustees were authorized and directed to pay to the Brandywine Manufacturers' Sunday School, the Female Harmony Society of Wilmington, the New Castle Benevolent Society, and the Female Union Society of Smyrna such sums as might appear their just proportion for "the number of poor children by each of them respectively educated." The trustees appointed under this law (1818) were allowed to draw and expend such sums as had been allowed but not expended under the law of 1817.¹

Fortunately there has been preserved a financial report from Sussex County made to the assembly on January 4, 1819, which may be used for comparison with the similar report made on January 15, 1818.²

SUSSEX COUNTY POOR-SCHOOL EXPENDITURES FOR 1818.

Paid Indian River Hundred for education for poor children.....	\$51. 93
Paid Broadkiln Hundred for education for poor children.....	102. 41½
Paid North West Fork Hundred for education for poor children.....	75. 76
Paid Cedar Creek Hundred for education for poor children.....	100. 00
Paid Lewes and Rehoboth Hundred for education for poor children.....	106. 00½
Paid Dagsborough Hundred for education for poor children.....	32. 97½
Paid Baltimore Hundred (balance of two years' appropriation).....	136. 05½
	<hr/>
	605. 14
Balance in hands of county treasurer.....	161. 88½
	<hr/>
	767. 02½
Received from school fund trustee.....	750. 00
	<hr/>
Received from miscellaneous sources.....	17. 02½
	<hr/>
	767. 02½

No other reports on the financial side of the act of 1818 are available, and this in itself would seem to indicate that no particular degree of success followed the enactment of these laws. Powell says (p. 140) that a few schools were organized and the way opened for further improvement, but the division of pupils into rich and poor was disliked, and the school fund came to be known as "a poor children's fund." This dissatisfaction is well characterized by Gov. Cochran, in his message in 1877, when he says:

It is not surprising that a provision which invited a free-spirited and independent people to have their children schooled as paupers proved a failure. Perhaps the best fruit of this effort was that it excited a widespread discontent, which served to quicken interest in the subject, provoking discussion and stimulating to an earnest effort for a better matured and more efficient system.³

¹ Delaware session laws, 1818, pp. 340-346.

² House Journal, 1819, p. 40.

³ Message to general assembly of 1877, p. 16; also quoted by Powell, p. 140.

It would appear from these acts that the purpose of the legislators was to promote the organization of schools which should draw their support entirely from public funds. There is no indication that private incorporated academies were expected to share in the distribution of these public funds. This is evident from the supplemental act passed in 1821, which provides:

That for each and every poor white child taught at any incorporated or other regular English school within this State, and for whose tuition the teacher thereof can not in any other way receive compensation by reason of the indigence of such child and his or her relations and friends, one dollar per quarter, or four dollars annually, shall be paid out of any unappropriated money in the fund for establishing schools within this State.

Thus it seems not only was the education of the poor in Delaware to be branded as such, but it was to be done by contract at so much per head. The teacher was also required to make oath to his account and—

shall, moreover, obtain the certificate of at least three credible freeholders of the neighborhood that the child or children, for whose schooling the charges in said account are made, are such as ought to be entitled to the benefit of this act.

It would seem that this system was about as far from the present public school idea as was possible. None but paupers could enjoy its benefits, and for fear that another might slip in unawares this poverty was to be attested by the neighbors. Public education was only for those who could not help themselves. The public acts of 1817, 1818, and 1821 were a failure, because the pauper idea was in the ascendant. The act of 1817 ordered a report on the total number of poor white children in the State. The law of 1821 allowed out of the school fund \$1 per quarter, or \$4 per year, for each. It would seem that the purpose of the supplementary act of 1821 was to draw still more distinctly the lines between pauper and self-supporting citizens, and, according to Powell (p. 141), added to the unpopularity of the earlier laws. The children who enjoyed its benefits became the butt of ridicule for their more fortunate companions.

The conclusion is borne out by the State allowances for the education of poor children as provided for by annual enactments of the assembly, as follows:

Act of February 8, 1822: There was allowed to the Female Harmony Society of Wilmington \$195 "for the education of poor children" and to the Female Benevolent Society of New Castle \$115, to the Female Union Society of Smyrna \$48, and to individuals \$108.63½.

Act of February 6, 1823: The school trustee was directed to pay claims of teachers for "the education of poor children," amounting to \$482.26.

Act of February 2, 1824: Female Harmony Society of Wilmington, \$193.49; Female Benevolent Society of New Castle, \$61.37; and to others, \$240.13½. To this law was now added what was apparently a new section—that no teacher should be paid for more than 20 poor children in any one year.

Acts of January 9 and February 8, 1825: Female Benevolent Society of New Castle, \$76.11; Free Harmony School at Wilmington, \$80; Female Benevolent Society of New Castle, \$80; and to others, \$220.90.

Act of February 9, 1826: Free Harmony School, Wilmington, \$80; Female Benevolent Society, \$80; Female Union Society of Smyrna, \$40.78; others, \$156.90.

Act of February 9, 1827: Female Benevolent Society of New Castle, \$80; Free Harmony School, Wilmington, \$80; to others, \$280.41½.

Act of February 16, 1829: Free Harmony School at Wilmington (for 1827 and 1828), \$160; Female Benevolent Society of New Castle for 1827 and 1828, \$160; Female Union Society of Smyrna for 1827 and 1828, \$99.44; and to 48 individuals, \$738.08, being an average of \$15.38 in sums ranging from \$1 to \$66.

These payments were all presumably for the two years 1827 and 1828, as there was no session of the assembly in 1828. The laws show that these sums were distributed over every part of the State.¹

III. SUNDAY SCHOOL LEGISLATION.

It has been noted that the poor were to be educated out of the proceeds of the school fund. The first definite provision for public taxation for the purpose of education seems to have come in connection with another section of the school law of 1821, that providing public funds for the support of Sunday schools. As is well known, the original idea of the Sunday school as advocated by Robert Raikes was not that of a school on the Sabbath for religious instruction, but the use of the Sabbath for working boys who could attend on no other day and their instruction in secular learning and by paid teachers. It has been shown that an act of 1817 (ch. 131) incorporated the Brandywine Manufacturers' Sunday School, in New Castle County. The law of 1821 (ch. 65) went further, for it provided that every school in the State instituted for the education of children on the Sabbath day should be entitled to receive from the county not more than 20 cents per white scholar per annum, provided the schools in question should be maintained not less than three months in each year. The amount to be used in this way was not to exceed \$200 for each county and was to be raised "as other county rates and levies are by the laws of this State."

This seems to have been the first provision for public taxation for education in the State, and it is perhaps best to give at this point the subsequent history of this movement. Scharf reports² that up to 1829 under this law 29 Sunday schools had received aid: Female school at New Castle, 100 scholars; Mill Creek, 40; Immanuel Church, New Castle, 93; Farm school, 50; St. James' school, near Stanton, 95; New Castle school, 93; First Presbyterian Church, Wilmington, 161; Newark male school, 20; Newark female school, 30; Mrs. Anderson's school, 23; Harmony school, 97; White Clay Creek, 120;

¹ See the original acts under these dates as given in the session acts.

² Scharf, J. T.: *History of Delaware, 1600-1888*, Philadelphia, 1888, 2 v., vol. 1, p. 444.

Brandywine Manufacturers' School, 191; Methodist Church school, Wilmington, 213; Second Presbyterian Church school, Wilmington, 150; Catholic Church school, 40; Protestant Episcopal Church school, 84; Brandywine village school, 50.¹

Scharf gives also a list of the teachers in these schools and the amount received by each. The earliest teacher to be thus paid seems to have been P. Quigley, of the Brandywine Manufacturers' Sunday School, who received \$17.20 for 86 pupils on September 20, 1821. In 1822 the teachers in eight other schools were paid sums varying from \$7.20 to \$26.40, amounting in all to \$87.20. At every meeting of the levy court appropriations were made for this purpose.² The law seems to have long retained its popularity and is still in force, for the code of 1915³ requires the levy court of each county to pay annually "to the teachers of each Sabbath school kept therein for three months or more in the year, 50 cents for each white scholar." The total payment in any one year in each county is limited to a total of \$500, and it is required that Sussex County shall return annually to the levy court a statement of the manner in which the appropriation has been applied, and in the absence of such report no appropriation is made. Such statements for all the counties generally appear in the auditor's reports down to 1905. Since that date they are not found.⁴

Another phase of educational development of that date was the Lancasterian school. At the session of 1819 a petition "signed by 260 citizens" was presented to the assembly praying the establishment of "a model school on the Lancasterian plan." The matter was discussed, a bill was brought in to establish such a school in Wilmington, but it failed to pass.⁵

IV. FURTHER LEGISLATIVE DISCUSSION.

While little seems to have been accomplished in the decade between 1821 and 1829 toward the actual organization of public schools, they had at any rate reached in their development that stage of importance which helped them command attention from the governors in their annual messages.

¹ Allowance for Sunday schools, 1829 (see Auditor's Report for 1829, pp. 151, 162, 182):

Sussex County.....	\$126.80
Kent County.....	13.60
New Castle.....	216.92
	357.32

² By an act passed in 1852 (ch. 645) a report on the expenditure of the public funds granted for the use of Sunday schools was required under penalty of loss of further appropriations.

³ See secs. 2190 and 2191 which have been brought forward from the code of 1852.

⁴ See the statistical tables printed at the end of this study. In 1867, chapter 134 repealed the law allowing \$500 per year to each county for Sabbath schools and fixed an individual payment of 50 cents for each scholar (pupil) in Kent and Sussex Counties and 20 cents in New Castle. This in turn was repealed by chapter 432, Laws of 1869, passed Feb. 9, 1869.

⁵ H. J., 1819, pp. 41, 119, 154, 158.

Gov. Jacob Stout urged in his message before the assembly in January, 1821, "the expediency of establishing academies and founding a college for the education of youth." He was further persuaded that—

the diffusion of knowledge among our citizens is indispensably necessary to the character and prosperity of the State, and that we have too long neglected the establishment of institutions similar to those which now constitute the pride and glory of our sister republic.¹

Gov. John Collins was the first, however, who showed any statesmanlike grasp of the educational situation. In his message to the assembly on January 2, 1822, he devotes nearly one-half of his space to this subject. He emphasizes the importance "of devising the best practical means of promoting education," for on it "depends the intellectual, moral, and religious character of the community." He said it was a matter "for surprise and regret that not even an experiment of public patronage had been made in the State;" it is true the means of the State are limited, but if "judiciously applied they might effect very important purposes." The counties had not been divided into school districts and there were few schoolhouses, but it was suggested that portions of the school fund might be offered the districts on condition that they "raise other specified sums by contributions." He insisted that these voluntary private contributions were necessary for the salvation of the schools:

It is conceded that these schools must be supported, chiefly, by voluntary contributions. It is probably best that it should be so; for that is rarely much prized which costs little; and it happens, according to the common principles of our nature, that some who would embrace the means of education if attainable for a price which they could afford, would altogether neglect them if offered as a free gift. It is submitted that the great object of the general assembly, in respect to the subject of promoting education, should be to excite the attention and combine the exertions of individuals; to attempt, by furnishing some public funds, to obtain greater voluntary contributions; and by placing the subject in the view of the different sections of the country, to impress upon the minds of the people the principle that to provide the means of education is an important part of their concerns.

With these views of the functions of the State in matters of education, it would naturally follow that Gov. Collins did not approve the laws of 1817, 1818, and 1821:

I have on a former occasion questioned, and I now submit to your consideration, whether the appropriations, which have heretofore been made of portions of the school fund, for the purpose of education are consistent with the nature and intent of that fund, or calculated to produce so much good as might be effected in a different manner? * * * The charitable nature of the appropriations and the benevolent views with which they are made command our esteem, but it is wisdom to consider that the general purposes of education in which the whole community are interested demand

¹ H. J., 1821, p. 17.

more than our school fund can afford, and that duty therefore requires that no part of it should be diverted from its legitimate course.¹

It will be noted that the central idea in the plan of action proposed by Gov. Collins was one of cooperation between the local community and the State. The community was to raise its funds by private subscription, and the State was to draw upon the school funds. This idea came, no doubt, from the suggestions of Willard Hall, then a member of the State senate and long interested in the development of education. As will be shown later the school law of 1829 was his work, and the suggestions of Gov. Collins in 1822 are near enough to serve as the prototype of that law. But the time was not yet. More talk was necessary, the State had not yet made up its mind.

At the session of 1823 little emphasis was put on education. The high-water mark of 1822 was now beginning to ebb, for Willard Hall was now no longer in the senate. Gov. Caleb Rodney satisfied himself with recommending to the assembly the consideration of—

the propriety of adopting some specific plan for the permanent diffusion of education among the whole body of the people. * * * The elementary instruction of youth forms the basis of their usefulness to the State. * * * A knowledge of reading, writing, and arithmetic, which may be acquired in country schools under proper regulations, greatly contributes in all, * * * One striking feature of such a system is that it will comprehend the education of females, which is an object of the first importance and almost of indispensable necessity.²

With the opening of the assembly in 1824 a new era for the schools gave promise of beginning. Gov. Charles Thomas took the matter up in his message and in eloquent terms reviewed the situation:

I would earnestly press upon your attention the propriety of adopting some plan by which the means of education may be accessible to every member of the community. This is a subject of primary importance. * * * The school fund is gradually increasing; but, if permitted to remain untouched, it would require at least 20 or 30 years before it would be sufficient to carry instruction into every family. If unused, with the most assiduous care one generation must pass away before it would be productive of any benefit to the community. In these portentous times it seems rather a hazardous experiment to permit one generation to sleep in ignorance, in order that light and knowledge may be extended to the succeeding. The best way to secure the blessings of education to the next generation is to confer them upon the present. Ignorance can not appreciate what it never enjoyed; they alone who have been favored with the blessings of education can estimate them at their proper value; * * * I would, therefore, recommend to your consideration the propriety of calling the school fund into active operation, and of supplying its deficiency to promote the object for which it was originally designed, by a school tax. Such a tax would be a blessing to the people, rather than a burden; for it would tend to relieve them from the most intolerable of all burdens, the burden of immorality and ignorance. If, however, you should deem it inexpedient to encroach upon the present school fund, I would urge upon you the

¹ At the session of 1822 was presented the report to the Maryland Legislature on Jan. 30, 1821, on the granting of public lands to the older States for educational purposes in order to even up those granted to the newer States. The Maryland report is reprinted and a strong report from the assembly committee sustained the Maryland contention (see H. J., 1822, pp. 18-31 and 74-80; and S. J., 1822, pp. 44-50).

² H. J., 1823, pp. 20-21.

propriety of laying a school tax for the purpose of the rising generation. A small tax would be sufficient if the State was divided into school districts and a certain sum allowed to every district that would furnish houses sufficient to accommodate a specified number of scholars or a certain sum, for each scholar, to every portion of any district that will furnish a schoolhouse. In a country like ours, where all power, directly or indirectly, flows from the people, it is a matter of astonishment that the diffusion of knowledge and the extension of religion and morality among the people were not the first objects of public patronage. Some of our sister States have wisely extended the arm of public protection over the education of the poor. I trust that you will not be backward in following this example. * * * In vain do we boast of our elective franchise and of our civil rights if a large portion of our citizens are unable to read the tickets which they annually present at the polls. Such men may think themselves free, but in fact they are slaves. Ignorance always has been, and always will be, the slave of knowledge. If information is generally diffused among a people, that people will always be their own masters; they will always govern. An enlightened people never has been, and never can be enslaved. * * * Sensible of the incompatibility between knowledge and slavery, the masters of the Old World have closed every avenue against the people, and openly declared that a nation, to be kept in chains, must be kept in ignorance. The circulation of all books that advocate political liberty and civil rights has been suppressed, and the freedom of the press is totally destroyed. * * * Enlighten the people; open schools for the instruction of the poor, and our liberty will be perpetual. But, if we close our ears against the admonitions of history, and shut our eyes against the light of experience, the fairest prospects that ever opened upon the world will be blighted, and the hopes of humanity and the prayers of the pious will be fruitless and unavailing.¹

This eloquent address, although falling short of what would be to-day expected of an educational orator, was far in advance of the leaders of the day when it was delivered. There appears here the first suggestion of a tax for general public education in the history of the State. The idea of public education as intended primarily for the poor had not yet disappeared, but the signs are evident that the educational leaders of the State were thinking. This last remark does not apply, however, to some of the legislators. The discussion on education began in the assembly by inquiring how much had been actually paid out from the school fund under the pauper school laws of 1817, 1818, and 1821.²

This was reported to be:

To New Castle County.....	\$1,937.50
To Kent County, \$1,250, less \$497.32½ refunded.....	752.67½
To Sussex County, \$1,000, less \$270.38 refunded.....	729.62
Total expended for public schools under the acts of 1817, 1818, and 1821.....	3,419.79½

A committee of the assembly then reported on the educational sections of the governor's message. This committee was convinced of the necessity of "doing something to improve the condition of schools." It was a lamentable fact that in some neighborhoods there were no schools, and in others "where they are established, they are, in many instances, from the incompetency and immorality of the teachers who conduct them, in the most unprosperous state."

¹ H. J., 1824, pp. 10-12; S. J., 1824, pp. 8-10.

² H. J., 1824, pp. 21, 64-66.

It was recognized, however, that until the funds were sufficient attempts at improvement would be disappointing and that expenditures under the acts of 1817, 1818, and 1821 had been made "for the education of poor children without materially promoting their instruction," for these children, except at schools in a few of the towns, had been taught "for such short and irregular periods that they could not have made any sensible progress in acquiring a knowledge of the first rudiments of learning."

The committee estimated that in eight years from 1824 the school fund would have increased so as to yield an annual income of \$15,000; that 300 schools were necessary for the State, to each of which \$50 might be allowed, or, still better, that the income of the fund might be apportioned as the needs of the pauper children might demand. It is everywhere assumed that the State fund for paupers was to be supplemented by private funds from those parents able to pay. This was probably the purpose of the assembly when organizing the school fund in 1796, for it "could not have been so visionary" as to suppose that the fund could ever be able to establish the new schools needed and support those already in existence. To accomplish that object a fund of \$2,000,000 would be needed. Nor was it to be supposed that it was the purpose of the assembly to take these schools so entirely out of the hands of the people "as to have them exclusively supported at the expense of this fund." Nor was it to be imagined that the assembly of that day "could have conceived the idea of combining with the avails of the fund, after it should have attained some growth, a school tax to be levied on the assessments of the real and personal property of the citizens."

It was estimated that a sufficient school tax would amount to \$80,000, "a larger sum than the aggregate of the county rates and levies, poor and road taxes, raised in the State. This would be almost exclusively paid by the holders of real property, who being saddled with so enormous a tax, in addition to their present unequal burdens, would be grievously oppressed."¹ There follows a curious argument against the imposition of such a school tax, for it would be "peculiarly obnoxious to the proprietors of great freehold estates." In conclusion, the committee thought that the school fund, "being the only resource on which reliance can be placed for founding new schools and meliorating the condition of those now established," ought to be "kindly and carefully fostered" and that after eight years it might have so accumulated as to make it possible to put the schools "into active and useful operation."²

The arguments of this committee have been quoted so extensively for two purposes: (1) To show how far the people of Delaware still were in 1824 from recognizing universal taxation as the basal principle of public education; and (2) to explain the provisions and crudities, the looseness and weakness of the school law of 1829, for

¹ These freeholders paid tax on rental values only.

² H. J., 1824, pp. 126-131.

in seeking to secure some result Judge Hall, when drawing that bill, had to keep himself within such bounds as would pass the assembly and be, to some extent at least, agreeable to the people of the State.

This report seems to represent the end of the school-fund period of agitation for public education. There is little in Gov. Paynter's messages in 1826 and 1827 on the subject, and this little deals rather with home training and moral education than with "the mere acquisition of the arts of reading and writing, and of the knowledge of arithmetic, and of foreign and dead languages" for which the governor seems to have had a most sovereign contempt.¹

It will be noted that the school-fund period extended from 1796 to 1829, just a generation. The fund was based on slight, but certain, sources of income. It began with nothing. In 1829 it had accumulated stocks worth in the market more than \$158,000, although there had not been until 1829 any increase in the assessed valuation of State property. It appears that the fund was carefully and honestly administered, and while under supplementary laws it was constantly drawn on for money with which to pay the judicial officers of the State and even the governor, it would appear that these sums were regularly, systematically, and honestly repaid, but the administration of this fund does not seem to have taken on a character essentially different from that in other States, for the financial administration of the fund came to be an end in itself and the schools disappear largely from view.

This becomes distinctly visible when we come to consider the sums paid out of the fund for schools and the sums invested for the fund in bank stocks. Under the act of 1817 each of the counties was allowed \$1,000 per year for poor children. All the sums allowed were not paid over to the counties and all that was paid over was not expended, but a part covered back into the fund. From 1817 and 1818 the sums paid to the counties or to teachers for teaching poor children never amounted to as much as \$1,000 per year until 1828-29, when it was \$1,115.93, and this, too, although most of the time the annual income from marriage and tavern licenses and from bank stocks varied in amount from \$2,131 in 1823 to \$10,550 in 1826. And this failure to spend seems to have been due as much to the indifference to schools as to the usual desire to increase the fund. In 1827 no more than \$432.89 was credited as expended for schools, and of this sum \$160 was paid for Sunday schools. The law of 1821 provided that the funds paid to Sunday schools should be raised by a general tax, as were other taxes. It is not clear how the \$124 paid out in 1822 for Sunday schools and the \$189 paid out in 1823 for the same purpose were raised.

The total effect of the efforts from 1817 to 1821 to establish schools was either nil or bad. No workable scheme of education was evolved;

¹ See H. J., 1826, p. 12, and same 1827, p. 26.

no schools were permanently established; the spirit of educational endeavor was not brought into the State nor induced to make it an abiding place; little or no interest in education was awakened among the masses; no friends for the system were raised up, and the deliberate declaration that the income of the fund was for the teaching of paupers, deliberately and distinctly so declared, divided the population into the rich and the poor, emphasized and exaggerated social distinctions, aroused a spirit of independence which would have none of the education thus offered, and so made the whole attempt a dismal failure. During these dark years, when public school education was at its nadir in the State, the better system had apparently but one friend. His efforts for better things have been noticed already in connection with the messages of the governors in 1822 and 1824, and in 1829 his ideas were finally crystallized into law. This friend of real public school education was Willard Hall, whose work will be considered with some detail in the next chapter.

V. STATISTICAL SUMMARY OF THE SCHOOL FUND.

All that had been really accomplished before 1829 may be given statistically in the following presentation of the fortunes of the school fund, 1796-1829:

Statement of Delaware school fund, 1796-1829.

Year.	Authority for statement.	Annual receipts, including dividends and excluding balances.	Paid for public (poor) schools.	Paid for Sunday schools.	Estimated value of bank stock belonging to school fund.	Tax valuation (hundreds omitted).
1796-97.....	H. J. 1798, 42-43.....	\$3,523.53			\$3,523.53	
1798.....	H. J. 1799, 21.....	1,361.00				
1799.....	H. J. 1800, 21-22.....	2,436.54				\$8,857.000
1800.....	H. J. 1801, 24-25.....	1,802.00				8,837.000
1801.....	H. J. 1802, 14.....	672.00				8,502.000
1802.....	H. J. 1803, 16.....	3,280.82				8,651.000
1803.....	H. J. 1804, 20-21.....	2,284.00				8,819.000
1804.....	H. J. 1805, 14.....	1,787.00				8,592.000
1805.....	H. J. 1806, 16-17.....	3,674.09			22,368.55	8,709.000
1806.....	H. J. 1807, 8-9.....	1,792.00				8,792.000
1807.....	H. J. 1808, 22.....	2,993.00				8,293.000
1808.....	H. J. 1809, 18.....	2,174.00			33,359.01	8,297.000
1809.....	H. J. 1810, 35-36.....	5,462.95			39,480.72	8,228.000
1810.....	A. R. 1810, 32.....	4,369.65			46,403.98	7,991.000
1811.....	H. J. 1812, 42-3.....	7,894.00			58,893.37 ¹	8,009.000
1812.....	A. R. 1812, 35-36.....	7,431.20			57,912.85 ²	8,041.000
1813.....	A. R. 1813, 41-42.....	9,100.75			68,458.29	7,936.000
1814.....	A. R. 1814, 37.....	11,210.61			78,213.84	8,073.000
1815.....	A. R. 1815, 30-31.....	7,655.20			82,714.22	8,029.000
1816.....	A. R. 1816, 32-33.....	8,568.20			91,153.70	8,611.000
1817.....	A. R. 1817, 35-36.....	8,338.25	\$1,250.00		99,131.88	8,686.000
1818.....	A. R. 1818, 37-39.....	10,470.66	2,250.00		91,766.37	8,567.000
1819.....	A. R. 1819, 31-32.....	5,567.88	250.00		86,678.63	8,538.000
1820.....	A. R. 1820, 234.....	7,537.25 ³			94,102.82 ⁴	8,696.000
1821.....	A. R. 1821, 252.....	8,061.94			114,689.75 ⁵	8,726.000
1822.....	A. R. 1822, 243-7.....	8,185.50	880.22 ⁶	\$124.00	119,758.84	8,816.000
1823.....	A. R. 1823, 201-2.....	2,131.00	376.99	\$189.00	120,983.18 ⁷	8,851.000
1824.....	A. R. 1824, 282-3.....	8,761.87			121,922.70 ⁸	8,924.000
1825.....	A. R. 1825, 275-9.....	7,345.00	380.76		121,264.07	8,646.000
1826.....	A. R. 1826, 246-9.....	10,442.02	367.03		123,788.28	8,755.000
1827.....	A. R. 1829, 245-7.....	9,321.34	272.89	\$160.00	144,721.09	8,773.000
1828.....	A. R. 1829, 278-9.....	7,027.75		\$414.92	151,643.42	13,115.718
1829.....	A. R. 1830, 143-5.....	10,651.48	1,115.93	\$357.32	158,160.15	13,262.000

¹ It is not clear whether these sums were paid from the school fund; apparently they were not.

² Charged as coming from the school fund, but under New Castle and Sussex Counties there is reported a total of \$206.49, which was apparently paid out of county funds.

³ Apparently paid out of local funds.

The investments and amount of the school fund in 1829 were as follows, as taken from the auditor's report for 1829:¹

2,439 shares stock in Farmers' Bank, full paid in, at \$50 per share.....	\$121,950.00	
Estimated value, at \$45 per share.....	\$109,755.00	109,755.00
37 shares in Bank of Delaware, at \$310 per share.....	11,470.00	11,470.00
44 shares in United States Bank, at \$123.25 per share...	5,423.00	
20 shares in United States Bank, at \$122.87 per share..	2,457.50	
1 share in United States Bank, at \$123 per share.....	123.00	
65 in all, estimated at.....		8,003.00
Chesapeake and Delaware Canal stock, cost.....	21,250.00	21,250.00
Balance cash on hand.....		6,682.15
Cost price.....	162,673.50	
Market value.....		158,160.15

¹ Appendix to H. J. 1830, p. 144. These totals will be found not to foot up correctly, but they are copied as given in the auditor's report.

Chapter III.

THE BEGINNINGS OF PUBLIC SCHOOLS.

I. WILLARD HALL.

There came to Delaware in 1803 a man who through a devotion of 50 years to the cause of education won for himself in that State the loving title of father of the public schools. This man was Willard Hall (1780-1875), a native of Massachusetts, a Harvard graduate in the class of 1799, a lawyer by profession. He served as secretary of state of Delaware 1811-1814; was elected to Congress in 1816 and 1818, and was again secretary of state in 1821. In 1822 he was a member of the State senate, where his influence in behalf of education was already beginning to be manifest. As has been shown in an earlier chapter, he was the responsible person behind the educational recommendations contained in Gov. Collins's message of that year, and from that time on there was no let-up in his enthusiasm for the schools. In May, 1823, he was appointed by President Monroe judge of the Federal District Court of Delaware, a position which he filled with fidelity for 48 years. His elevation to the bench brought Judge Hall relief from the harassing details of his profession and gave him much leisure for maturing and developing those larger plans of usefulness upon which he had already begun to meditate, and it is even doubtful whether these unofficial and purely voluntary services, though less conspicuous, were not more valuable and far-reaching in their influence than his judicial duties.

Of his interest in the schools of the State his biographer says: ¹

It is very far from an adequate estimate of the services of Judge Hall to the cause of popular education in this State to regard him only as the founder or organizer of the school system. That was but the commencement of his labors. Not content only to frame and inaugurate the system, he watched its operations with ceaseless vigilance, encouraging effort, conciliating honest dissent, shaming selfish cavils and narrow prejudices, studying to the utmost detail the practical working of the system, seeking legislation to remedy its defects and to improve its efficiency. He was the ever-ready adviser of school commissioners and teachers, even in the selection of school books and the adoption of the best methods of instruction. His care of the schools was paternal. The father of a family does not with more solicitude and watchfulness provide for the education of his children. In New Castle County, where his personal influence was more direct and operative, he organized an annual school convention, in which delegates from the districts met and discussed the interests of the

¹ For a sketch of Judge Hall's life, see the memorial address delivered by Hon. Daniel M. Bates before the Delaware Historical Society in 1876. (Wilmington, 1879.)

schools, and reports were made of their progress. These reports he examined in their minutest details, classified their results, and published them in pamphlet form with the proceedings of the convention, and with his own observations upon the then present condition and necessities of the schools. These pamphlets he took means to circulate in all the districts from year to year, as a means of diffusing information and quickening interest in the subject. The office of superintendent of the public schools for New Castle County, which during all these years he held under a commission of the governor, was hardly more than an honorary appointment, being without emolument or any defined duties. It was not needful either to quicken his interest in the schools or to add to the weight of his personal influence on all questions touching their welfare.

It will be found on examination that the praise quoted above, although often extravagant and inaccurate and without an intimate knowledge of what public education really stands for, as will be clearly evident to one who studies this biography in the light of the public-school development from 1829 to 1861, can hardly be called either excessive or undeserved. This is because Judge Hall, although conservative and steadily advocating an idea in school administration which has long since been shown to be unworkable, was the one man in Delaware who kept the public-school idea constantly before the minds of the people, and so made the evolution of a better system possible.

Of Judge Hall's share in securing the school law of 1829 Mr. Bates says further in his memorial address (p. 33):

In 1822 Judge Hall became again the secretary of state. * * * The secretary then took up the interests of popular education in this State with a grasp which relaxed only after 50 years of labor and under the infirmities of great age. It became, thenceforth, truly his life work. He matured, and the governor, by message to the general assembly, presented, and with great force of reasoning recommended, what in principle and outline became, and still remains [written in 1876], the school system of this State. The scheme proposed the division of the counties into school districts, with legal authority in the qualified voters of each to establish and maintain free schools; each district to receive a fair distributive share of the income of the school fund, upon the condition of its raising, additionally, a sum adequate, with the dividend from the school fund, to maintain a school. The scheme, as explained and enforced by the governor's message, so far harmonized conflicting opinions as to promise a practical solution of the long-vexed question, how to make the school fund available; and so, at a subsequent session of the legislature, Judge Hall was requested to mature the plan in further detail and to embody it in a statute. The result was the school law of 1829. Since that time the system has been, of course, revised, modified in details, adjusted in some points to the results of experience; and, as it is to be hoped, its efficiency has been much improved by the act of the last general assembly [that of 1875], providing for a State superintendent and board of control, with power to supervise the methods of instruction, and to raise the standard of the qualification of teachers. But in its essential principles and general framework the system of 1829, devised by Judge Hall, remains, after a trial of now half a century, well approved by experience and by the public judgment.

From this address it appears that the main idea in Gov. Collins's proposed scheme of 1822—a cooperation of the community and the State in the organization of the school—was Hall's idea. Indeed,

he actually drew up at that time a general law for the encouragement of free schools. This plan met with the approval of the governor, but failed of enactment into law for he was ahead of the legislature and must abide his time. The State was coming slowly to realize, however, that the idea contained in the laws of 1817, 1818, and 1821 was a failure, and that the school system would have to be redrawn on a broader and more liberal basis. As this failure became more and more apparent, the demand for a better act became more insistent, and in 1829 the proposals of Judge Hall received the sanction of the assembly. This brings the subject chronologically down to an examination of the educational act of 1829.

II. THE FREE-SCHOOL ACT OF 1829 AND ITS LATER AMENDMENTS, 1830-1860.

In his message to the assembly in 1829, Gov. Charles Polk introduces the subject of education by saying:

To the diffusion of intelligence through the medium of common schools all profess to be friendly; and the subject has so long furnished a standing theme of speculation among us that it has lost the interest of novelty, yielding little but trite observations to the truth of which every one gives a ready assent, yet it can not be said that we have ever realized the benefit of a single practical effort to establish a general system of education throughout the State.

Gov. Polk then enters into an estimate of the yearly value of the income from the school fund and shows that this income was insufficient to support a school system, for it never entered "into the imagination of those who established it" that the fund—

would ever accomplish that design without the subsidiary efforts of the people among whom it might be distributed. * * * Donations and bequests to the State appear to have been anticipated by the framers of the act, and in this they have been disappointed. * * * Any plan that can be devised by which the business of improving the education and morals of our people shall be reduced to a permanent system throughout the State will be a public blessing. We have been so long without any that some who were once advocates of the appropriation of the fund for the establishment of schools, in despair of ever arriving at a successful system, have been willing to divert it from its legitimate purpose.¹

The committee to whom the educational sections of the governor's message were referred floundered worse than the governor himself; they asked for more time and that they be instructed to invite Judge Hall to draw up a bill.² They were against schools that were free to all in the modern sense, because "that which costs us nothing we esteem lightly; this is a law of our nature founded in wisdom." Another argument against such a system was the failure under the acts of 1817, 1818, and 1821. Says the author of the report:

I had conversation with two of the trustees, to whom, when in former years appropriations were made of part of the income of this fund, money was committed to pro-

¹ H. J., 1839, pp. 8-10.

² H. J., 1839, p. 40.

vide schools for poor children; and the information of both was, that they provided the schools, but that they could not persuade the children to attend. One (and he was a respectable man) informed me that he went round to the parents; but they appeared indifferent to the matter. There must therefore be some system differing from one of entire gratuity.

And on the writer of that report it never once dawned that this indifference was not due to the gratuity itself, but to the way it was given; not that schools were free, but that those who accepted their privileges should take at the same time the brand of pauperism. To the sturdy, defiant, unbending, and independent manhood of Delaware is alone due our thanks that the State was saved from the imposition of a pauper system with its horizontal division of the people into two classes—the upper class who could educate themselves and the paupers who were to be educated by the State not as a right but as a gratuity. No wonder the committee could truthfully say in their report that “education is not now an object of so general attention in this State as it was 20 years ago. There is less care for schools.” The agitation and promotion of the pauper idea had done its perfect work.¹

Along with this report of the committee was presented Judge Hall's draft of a bill for a system of public education which became the “Act for the establishment of free schools,” of which a summary follows.²

The chief characteristics of the law of 1829 are as follows:

The levy court appointed five commissioners in each county to divide it into school districts. In making the division “it shall be a general regulation to form each district so that the most remote parts shall be 2 miles, or about that distance, from the center,” but districts comprehending a town might “be of such dimensions as shall be deemed just, having respect to the population.” The commissioners were to ascertain the number of schools in operation, the number of scholars taught therein, the several sums paid to the teachers, and to form an estimate of the number of children in each district between 5 and 21 years of age. The commissioners of each county were to form a board, with authority to review their proceedings as commissioners and to alter or form the bounds of any district.

The school voters in each district were privileged to hold a stated meeting every year, on the second Monday of October, at the schoolhouse, or any place designated by the levy court, to elect, by ballot, a clerk and two commissioners of the district. They were to determine in the same manner how much money was to be raised “by subscription or voluntary contribution” for procuring or maintaining a schoolhouse, or for “the support of a free school” in the district. Every resident in the district having a right to vote for representatives in the general assembly was also a school voter of said district.³ Occasional meetings might also be held.

Duties of the district clerk and commissioners: (1) To determine a situation and erect a school building thereon; (2) to keep the building in good repair; (3) to provide a school for as long a time as the funds would admit; (4) to receive all moneys and apply the same; (5) to employ teachers; (6) to do all acts requisite to the maintenance of a school.

¹ H. J., 1829, pp. 123-125.

² Laws of Delaware, 1829, pp. 184-197. See also a discussion on the bill in H. J., 1829, pp. 173-175.

³ The committee were elected for one year until in 1867 their term was extended to three years.

They were to employ as a teacher no person whom they did not have just grounds to believe to be of good moral character and well qualified to teach reading, writing, arithmetic, and English grammar, and such other branches of knowledge as the committee might deem necessary to be taught in the district. They might employ a female teacher (in respect to whom the qualification of reading and writing might be sufficient) in the summer months or other parts of the year when small children could attend school and others were engaged in the common occupations of the country. They might dismiss a teacher.

The clear income of the school fund thereafter to accrue was to be apportioned and appropriated among the three counties, one-third to each. One of these equal parts was then to be divided "among the school districts in such county, to each an equal share." Each district, however, should have from the school fund an amount equal to that resolved to be raised by the voters, and no greater. The auditor was to settle the accounts of the school committees, who were to appear before him whenever he attended "in their county to settle the account of the county treasurer," and failure to meet their part of the agreement meant forfeiture of their claims to a part of the funds for the next year.

Each school was to be opened on the first Monday in November and to continue as long as funds permitted. It was free to all white children. The school committee was to make regulations for the government of the school and was to "provide for the expulsion of a scholar for obstinate misbehavior."

Each school was made a corporation by the name of school district No. —, with the usual corporate powers.

The governor was directed to appoint, on or before the first Monday in March, a superintendent of free schools in each county for one year. The duties of the superintendent were: (1) To correspond with all persons interested in the execution of the act; (2) to aid in all matters connected with its execution; (3) to supply school districts with proper forms and to advise them in respect to their proceedings; (4) to see that notice be given of division of districts; (5) to collect information and report to the general assembly. For his services he was to receive no compensation but the payment of all expenses incurred in the performance of his duties. The earlier laws on the subject were repealed.

Judge Hall seemed himself evidently much pleased with the law. His estimate of it is quoted by Powell (p. 144):

The school system under these laws is simple and plain. It forms school districts, appoints and regulates the meeting of the school voters in these districts, and commits to these voters in these meetings the whole power over the subject of common schools for their districts. Every school district is a republican community for the special purpose of taking care of the interests of popular education within its bounds. It depends upon the school voters whether the children of the district shall have the benefit of a school and what kind of a school they shall have.

The import of the law appears in another quotation from Judge Hall:

The design of the system is not to make schools by its operation, but to enable and invite the people to make schools by their own agency.

The term "free" was applied to the school law to indicate two facts: First, that the people were left free to choose the length of time their schools should be in operation during any one year, and the amount of money to be raised by taxation for the support of the same thus placing upon the people themselves, voting in the school meetings, the power and responsibility of determining whether they would have a good school, an inferior one, or no school; second, making the title show that the

schools in the State were free for every white child to attend without reference to any money having been paid by its father or guardian.¹

The free school law of 1829 was soon subjected to numerous amendments. These began in 1830 and were followed by others in 1832, 1833, 1835, and 1837, but all after those of 1830 were of relatively slight importance. Those for 1830 were of great significance, for they gave to the school districts the authority to raise by local taxation such part of the required supplement to the school fund as a majority of the voters of the district might deem proper.² It provided also that any district which raised one-half of the distributive share to which it was entitled from the school fund should be allowed to draw the whole of the share due from the fund. This amendment cut the requirement set up by the act of 1829 in half. It also extended the time limit within which certain things could be done; neglect of the levy court to perform certain duties was not to count against the district; the number of commissioners was changed; and balances were made available for three years instead of going back into the county treasury at the end of each year. It was also made the duty of the school committee of the school district "to make an assessment list for their respective district." The assessment lists were to consist—

of the rates of persons of all the white male inhabitants of the district of the age of 21 years or upward, of the valuations of the personal property of all the white inhabitants of the district, and of the clear rental value³ of all the real estate within the district.

No tax was to be levied, however, without the express consent of a majority of the taxpayers, and in no case was more than \$300 to be raised in any district.⁴

There was at once uncertainty as to the proper interpretation of this amendment. To the assembly of 1832 Judge Hall addressed a communication as superintendent of New Castle County in which, after praising extravagantly the democracy of the law of 1830, he asks that it be amended to the extent of providing clearly that the matter of district school taxation should be settled by a majority of the votes cast at the designated election instead of requiring a majority of the voters of the school district.⁵

¹ Groves, J. H.: *History of Free Schools of Delaware*, in *An. Rep. Supt. Free Schools of Del.*, for 1880; also quoted by Powell, p. 144. These quotations seem to be from an address by Judge Hall issued for circulation among the people of the State soon after the passage of the act of 1829. (See *Rep. Com'r Educ.*, 1871, p. 109.)

² In a private letter written by Willard Hall in June, 1843, to Henry Barnard and now preserved in the Bureau of Education it is said: "About 1819 a law was drafted for establishing a system of common schools in the State, raising by taxation what should be required over the supply from the school fund. The draft was published by order of the legislature for the information of the people; it was abandoned." This may explain why the idea of taxation was left out of the act of 1829. Indeed, in this same letter Judge Hall says that "the power of taxation was stricken out."

³ It is of interest in this connection to consider the objections to the proposed school law, made by the legislative committee in behalf of the landowners in 1824. See ante, p. 32. This "clear rental value" was not finally repealed till 1917.

⁴ Laws of Delaware, 1830, ch. 21, pp. 21-24.

⁵ See his report in *S. J.*, 1832, pp. 31-37.

In 1832 also certain school committees were given more time in which to settle their accounts and the penalty for neglect was suspended.¹ In 1833 there was a redistribution of the clear income of the school fund "according to the aggregate number of white population, respectively,"² and the shares thus received in the counties were to be divided "among the several districts thereof, share and share alike."³ By another act two or more districts were permitted to unite and support a free school for the common benefit.⁴

In 1837 two acts of importance were passed. One of these admitted women to the schools as teachers on the same terms as men,⁵ while the other shows clearly how the educational wind was blowing in Delaware. Under the act of 1829 each of the local districts had been required to raise a sum equal to that to which it was entitled from the school fund; the amendment of 1830 reduced this requirement by one-half. The law of 1837⁶ cut this total requirement to the beggarly sum of \$25 per district, and Judge Hall tells us that this was sometimes raised by the patrons delivering 25 loads of wood at the schoolhouse at \$1 per load, while some of the more enterprising districts paid their teacher \$50, but took from him a receipt for \$75 and counted the difference as \$25 "raised."

By 1837 the amendments of most significance had been made to the law of 1829.

From 1837 to 1861 there was much school legislation, but most of it was purely local, for prior to 1857 no new school district could be created without special sanction of the general assembly, and the laws for this period are full of this special legislation.⁷

Occasionally, from 1851, acts looking toward the relief of a particular situation begin to appear. Thus in 1851 United School District Nos. 23 and 75 in New Castle County was allowed to exceed the \$300 limit fixed by the act of 1830 and to raise \$1,000 by taxation "in the same manner as school districts are authorized by law to levy and raise taxes." In this case the principle of the tax was not involved, but the amount.⁸

In 1852 District No. 9 of New Castle County, which had recently become a part of the Wilmington public school system, and one of the districts of Kent County, received similar authority to raise \$500,⁹

¹ Laws of Delaware, 1832, ch. 170, pp. 171-72.

² The earlier distribution had been in equal proportion to the counties without regard to the number of districts in each. This had caused dissatisfaction in New Castle and Sussex. See governor's message in S. J., 1832, p. 10.

³ Laws of Delaware, 1833, ch. 244, pp. 240-41.

⁴ Ibid., 1833, ch. 269, pp. 277-79. See also ch. 21, acts of 1830.

⁵ Laws of Delaware, 1837, ch. 79, pp. 81-2.

⁶ Ibid., ch. 138, pp. 176-77.

⁷ See for example the laws of 1847, chs. 158, 167, 198, 212; and in 1849, chs. 297, 315, 325, 335, 351, 354, 375, 413, etc.

⁸ Laws of Delaware, 1851, ch. 486.

⁹ Laws of Delaware, 1852, chs. 638, 676; 1857, ch. 419; 1859, ch. 552.

and from this time on there appears a tendency, more or less distinct, toward allowing the more progressive districts to thus provide for their wants over and above the bare necessities. An act of 1857 provided also that new districts might be created by action of the levy court of the county, the only limitation on their power being apparently the requirement that the new district should contain at least 35 children over 5. When created the new district became under the force of the same act an equal participant with the older districts, whether "original or subdivided," in the benefits of the school fund of the county.¹ But this provision for local action did not put a period to the creation of school districts by special legislation,² and there is little in the laws of more than local educational significance from the acts of 1829, 1830, and 1837 until the passage of the act of 1861.

That there were some good provisions in the original law of 1829 does not admit of doubt; that it was a vast improvement over the earlier attempts of 1817, 1818, and 1821 is evident, for it abandoned whole-heartedly and forever the idea that public education was to be a pauper affair. Had Judge Hall accomplished nothing else educational in character, he would still deserve gratitude for wiping those disgraceful acts from the statute books of the State and erasing them from the minds of the people. The law of 1829 swept the table clean of the trash that had littered it and healed the sore which was injuring the cause of education, but when the turn is made from the negative to the positive features of the act there is less to be said in its favor. True, it was a great step in advance, when compared with the laws that it superseded, but it stood for little actual progress in itself. It declared all the schools to be free to all white children; it provided for county superintendents of education, but without salary, and for a community of interests between the school district and the local school fund; it made aid from the fund depend on self-help—they were to receive as much as they gave—but it left them free to give or not to give, to have a good school, a poor school, or no school at all, and to this failure no penalty was attached save the loss of their share of the fund and their own increasing ignorance. For one of these penalties unfortunately they did not care, and the other they could not realize. Under this law no tax was levied by the State nor by any smaller unit except the school district; no requirement was placed by the State nor by any smaller unit on the individual citizen. The law was simply permissive and only pointed out how each district might become a partaker of the common fund. Under a strong, intelligent, aggressive, and enthusiastic county superintendent much might be accomplished. Without such a leader little need be expected.

¹ Laws of Delaware, 1857, ch. 442. The requirement of 35 pupils in the district was a general one apparently and was renewed from year to year. See, for instance, ch. 206, passed Mar. 12, 1863.

² *Ibid.*, 1857, chs. 456, 467, 470, 474; 1859, chs. 532, 565, 594, 606.

This is exactly what happened. The history of public school education in Delaware for the next 30 years is mainly the history of effort to arouse interest in the local school districts, to provide enough local funds, first by subscription and contribution and later by taxation also (permitted in 1830) to meet the requirements for securing their proportion of the interest of the school fund. This effort generally developed into a struggle to secure a tax or to retain the tax already secured; it was renewed annually and with varying fortune, except that the invariable result was that when the tax question was annually settled little energy remained for school administration, and the schools were left to run themselves while their supporters recuperated their energies in anticipation of the next annual struggle over the question of local taxation.

This phase of public school education in Delaware was properly if not attractively characterized by Supt. Groves when he said: ¹

Irresponsible and ignorant voters, together with men who had no direct interest in education, labored strenuously year after year in the annual meetings to vote down tax, by so doing to deprive the community of both the aid of the State and assessable property within the districts. Even the poor man, who represented in many cases a large family of children, whom a public or free school law especially benefited, was found voting against tax—voting away money that was lawfully placed within his reach, which would give to his offspring means for future support and happiness. Men interested in the prosperity of the State and the education of the rising generation petitioned legislature after legislature to change this feature of the law.

But no change in this section was possible until 1861.

III. THE EDUCATIONAL CONVENTIONS OF NEW CASTLE COUNTY, 1836-1855; THE GROWTH IN DEMAND FOR CENTRALIZATION.

Perhaps the one idea which stands out most prominently in the educational history of Delaware between 1829 and 1861 is the realization of a growing necessity for greater centralization and the long-continued struggle against the inevitable in attaining that end. In the following section that fact comes repeatedly to the front.

In 1830 the governor reported that school districts had been set off in Sussex and Kent. Amendments of that year provided for similar action in New Castle. County superintendents were appointed, but the office was an unpaid one. It required considerable knowledge of educational matters and much devotion to the cause of the people. It is perhaps safe to say that the success or failure of the schools depended entirely on the personality of the county superintendent. Without these extraordinary qualifications the system was foredoomed to failure.

It was reported that in 1833 more than 133 districts had been organized and were receiving aid from the fund. Of these schools 61 were in New Castle County, 36 in Kent, and 36 in Sussex,² but as

¹ History of the Free Schools of Delaware, in An. Rep. Supt. Free Schools of Delaware, 1880, p. 48.

² Powell, L. P.: Hist. of Ed. in Delaware, p. 145.

laws already quoted would indicate, the funds available were not sufficient, there was already hostility to the voting of taxes, and the schools began to decline. In 1835 Gov. C. P. Bennett saw the defects in the law and in his message to the assembly declared:

A system of education prescribing the mode is as necessary to the success of this, the most important institution of a free government, as the series of laws by which its creation is authorized, * * * the vitality of the principles of our Government depends upon the diffusion of knowledge. * * * The system of education therefore ought to be graduated in strict conformity with this material characteristic.

He then adverts to the Prussian system, praises and commends some of its characteristics, and while declaring that "as a system" it was "entirely unsuited to our habits and opinions" thought that "in many of its details it would be found applicable to our situation and views; and some of its formulæ might be adopted as models whereon a portion of our less comprehensive system might be molded."¹

The committee of the house to whom this part of the message was referred made a long report in which they declared that the people had taken but little interest in the education of their children and that the schools were retrograding when the present law was enacted; they reviewed the objections to the system of taxation then in force for the use of schools and suggested that some of these might be removed by changing the tax value of land from the rental value basis to the gross value basis. They reported 127 schools in the 193 districts.²

In this year also there was a proposition to give to the school fund the sum of \$25,000, being one-fourth of the sum which was to be raised by lottery for the use of the Delaware State College.³

In 1836 comes the first of the series of annual educational conventions held in and for New Castle County and in which Judge Hall was leader and guiding spirit. The printed reports of these conventions are the principal sources of information which we have of the progress of the free schools in Delaware for the 25 years from the passage of the law in 1829 to the suspension of the conventions in 1855. The accounts as given in their journals are incomplete, fragmentary, not uniform, and do not cover the whole State, yet they are the best available picture of the educational life of the State as a whole, as they show the needs and the difficulties of the system and suggest the methods of thought of the people.

The first of these annual conventions met in Wilmington on December 15, 1836. Forty-eight districts were represented by 123

¹ H. J., 1835, p. 10.

² H. J., 1835, pp. 65-70.

³ See Laws of Delaware, 1835, ch. 362, pp. 355-357. Between 1836 and 1851 the Delaware College lottery yielded "to the State" the sum of \$13,206.90, according to Gov. Tharp's message in 1851, but there is no statement of the part that went to schools, if any. (See H. J., 1851, p. 7.)

delegates; Judge Hall was its chief promoter and became its president, as he did of most of its successors. The convention, first of all, insisted on the greater centralization of power; then it asked the general assembly to accept the State's share of the surplus revenue and to apply the income to public education. They appointed a committee to wait on the assembly; and the act of February 22, 1837, by which the larger part of the income from this fund was made available for the public schools, was the result.¹ Thus at its first session the New Castle County school convention began to promote the cause of public education, and, although often halting and feeble in its efforts and frequently divided in its councils, continued for 20 years to make its contribution to the educational advance of the State.

The report for 1837 shows some of the characteristics of a modern educational meeting, and, while nominally composed of delegates from New Castle County only, was to a limited extent a representative convention of the educational interests of the whole State. Various matters of local and general, of temporary and permanent, interest were discussed, including textbooks, the method of raising money for the schools, the question of a normal school for the training of common-school teachers, school libraries, and school journals. A report on the uniformity of textbooks declared it to be "a decided advantage," and a uniform series was recommended: Angell's series of spelling and reading books, No. 1 to No. 6; Emerson's arithmetic, parts 1, 2, and 3; Smith's geography and atlas; Smith's grammar; Olney's History of the United States.

In the matter of taxation the committee were of the opinion that the best way was through a tax levied according to the existing provisions of the free-school laws and collected by the regular collectors of the hundreds and not by special collectors as was then the fashion. It was said in some districts that the plan of taxation was very unpopular; that it was at times difficult or impossible to get collectors to do the work, and that collection then devolved on the school committee.

In 1837 reports, oral or written, were received from 46 districts in New Castle County. In 3 of these no school had been established; about one-half of the others had been in operation seven years or since the adoption of the system; the other half were mostly instituted three or four years since; some were open all the year, but the greater part from 6 to 10 months only. In a considerable number of the districts schoolhouses had been erected. In 33 schools the whole number of pupils averaged 1,400, the largest numbering 200; in 3 or 4

¹ Barnard's *Journal of Education* for 1836, vol. 16, p. 309. No copy of the original edition of the *Journal* of 1836 has been seen. There was a reprint issued in 1850 in the form of a broadside. A copy of this reprint is in the Bureau of Education.

of the largest the sexes were taught separately. In a few the "mathematics and some of the higher branches of an English education are taught. But in the greater number, the rudiments only are attended to."

In 1837 also the school fund was increased by assigning to it a part of the income from the surplus revenue. Delaware's share of this fund was \$286,751.49. Of this sum \$265,793.83 was invested for the benefit of the school fund. The balance, \$20,957.66, passed into the treasury.¹ From an act passed February 22, 1837, it appears that the State had subscribed for 5,000 shares in the capital stock of the Farmer's Bank of the State of Delaware. It paid for them with this surplus revenue fund. The interest from this stock and the interest from the other money loaned by the State (except that loaned to Sussex County) was to be divided into three parts, one-third to each county. New Castle was to use it for schools, Kent for schools or for any other purposes, and in Sussex one-third went for schools and the other two-thirds for the poor.²

At the meeting held in 1838 the proposal to increase the school fund through the use of a lottery was discussed and condemned, and Judge Willard Hall made a long report against the establishment of a normal school for the training of common-school teachers. This report is of particular interest for the reason that it is so very different in form, thought, and content from the opinion of to-day. It should be remembered, however, that Judge Hall was not an educator, but a lawyer and Federal judge. He begins by pointing out that the pupil was often prevented from employing his time profitably by inability to secure a suitable teacher. Shall a school for the instruction of such teachers be established? Judge Hall answers, "No."

The notion held up is that the teacher is not simply to learn what is to be taught, but he is to learn also the art of teaching. In my opinion, this is a metaphysical affectation. The art of teaching lies in the heart. If a man sets his heart upon teaching, either from a principle of duty or delight in the employment, he will teach well all he knows. A man who proceeds upon what he professes to be principles of science, apart from this cooperation of the heart in communicating knowledge, will rest on his formalities; and the coldness and barrenness of death will rest there with him. A man whose heart glows with delight in communicating instruction probably will adopt some peculiar manner, and his astonishing success will be ascribed to his manner. Another with no heart in the business will coldly go over this manner and find no success. As we do not want children to be educated to be school-teachers, but to

¹ H. J., 1851, p. 7.

² See Delaware session laws, 1837; also ch. 27, acts of 1839. In his History of Federal and State Aid to Higher Education, Blackmar makes the general statement that the fund in Delaware went for "education." The above seems to have been the more exact division, but Gov. Tharp said in 1851 that according to the legislative report in January, 1840, of the interest and dividends apportioned "chiefly for the benefit of the school districts" the sum of \$11,752.76 was not distributed to the schools, but was carried to the treasury, "nor does it appear that this sum was ever restored to the school fund." (H. J. 1851, pp. 7-8.) Later the fund so increased that Gov. Temple could say in 1847 that the State was distributing \$28,500 among 185 districts and 11,350 pupils, or about \$2.50 to each. (See S. J., 1847, p. 21.)

be prepared for any station or employment to which they may be called, the correct course would seem to be to commit them to the instruction of those who have been so educated. To my mind the argument appears conclusive against the need of any such school.

Judge Hall argued that there were three additional objections to the establishment of a normal school: (1) The first objection arose out of what he considered "an axiom in the concerns of freemen, that men should be left to their own inclinations and judgments, to what they may deem their interest, their duty, and their fitness in respect to their occupation"; (2) as soon as the system came into full operation the "school-teachers, being educated for their particular employment, would form a body of men animated by a common spirit." This esprit du corps, this class consciousness, would give them a fearful power, as was the case with the Jesuits; (3) the increased cost, because the better educated the teachers the more pay they could command.¹

He argued, further, that teachers should not remain long in the profession:

I have long been fixed in the opinion that a few years only of the freshness of youth ought to be devoted to school teaching. In no other way will the best of our young men become teachers. They must look forward to something better. There are cases in which persons with particular aptitude to teach and particular fondness for teaching continue good teachers till old age; but they are rare. It is the result of my observation that those who teach long lose the power of usefulness. Their tempers are spoiled; they disgust their scholars; they get into a beaten track; they can make no improvement. The fervor and studiousness to excel, natural to youth and a new employment, being spent, give place to the weariness of a dull irksome round.

Judge Hall adds to his report some statistics on the general educational situation in Delaware:

Illiteracy in Delaware in 1838.

	New Castle.	Kent.	Sussex.
White adults can read.....	8,545	5,227	7,695
White adults can not read.....	872	1,578	2,621
White children, 10 to 15, can read.....	1,132	912	1,303
White children, 10 to 15, can not read.....	179	488	1,138
White children under 10 can read.....	1,020	327	385
White children under 10 can not read.....	3,262	3,205	5,376

At this time, also, efforts were made to procure libraries, to form lyceums, and to circulate educational periodicals. Committees were appointed to examine and visit teachers, and efforts were made to secure the creation of a board of examiners in each hundred. The main source of trouble for the schools, however, was the method of raising the necessary funds. The levy of the tax was often defeated at the polls, and then of necessity resort was had to private contri-

¹ See a modern article advocating substantially the same view of the normal school in the *Unpopular Review*, January-March, 1916, V., 64-65.

butions. There was a growing conviction that the only effectual way of putting an end to the apathy which was throttling the system—would be the passage of a law making it obligatory on each district to support a school for a specified number of months in the year—and that by the *tax system*—the proportion and amount to be adjusted according to the present law, and then handed over to the proper person to be collected with the other taxes of the hundreds (1839).

Another trouble of all these years was with the loose organization of the school system—if there can be said to have been any organization at this time. There was no general mandatory law. The whole idea of public education was bottomed on absolute democracy. Every school district had the absolute power of saying whether it should have a good school, a poor school, or no school, and there was no one to say them nay. And yet this extreme democracy had held up before its eyes the horrors of the centralized system of Prussia. So fearful were they of falling into the Scylla of Prussian centralization that they actually steered into the jaws of the Charybdis of decentralization.

In 1839 there was a discussion, in particular, of the ways and means to secure libraries for the various schools. It was recommended that the American School Library, published in 50 volumes by the American Society for the Diffusion of Useful Knowledge, and costing, together with a suitable case, the sum of \$25, be put into all of the schools. Lyceum lectures for school communities were sometimes provided and occasionally museum facilities.

In addition to the troublesome question of the school tax was that of the supply of teachers. The number of well-qualified teachers was always less than the demand. To meet the deficiency, "rather than be without a school, many districts have taken up with some strolling inebriate, well educated, perhaps, himself, but without moral principle and, of course, without industry or faithfulness in his calling." The committee reporting on this matter in 1839 did not agree with Judge Hall's report of the year before.

Your committee fear that many years must elapse before an adequate number of competent instructors can be found. They do not now exist; they must be created by special efforts for that purpose. Male and female seminaries must be established or fostered by the State, for the express purpose of multiplying teachers, or the cause of education will languish and be behind the age.

The pay of teachers will explain their fewness. One district paid out \$900 and another \$600 for teaching, but the number of teachers is not given. The sums usually paid to teachers varied from \$87.50 to \$67.50 per quarter. District 57 paid \$350, but this was an exceptional district:

In this district there has not been a vote in opposition in three years. In the commencement of the free-school system there was discord; but the people by coming together and discussing the subject, became satisfied that it would be ruinous to

neglect the education of their children, and that the free-school system, if cordially supported, would afford them the best means for this important object. The people are harmonious, the children are well taught, the school flourishes.

In 1840 the principal subjects of discussion were their perennial stand-bys. The collection of taxes in a way less offensive to the people was one.¹ It was proposed also to make school warrants receivable for taxes. The second matter for general consideration was the education of teachers. It was complained also that to this convention only 10 districts had reported. From a study of these reports it seems that the school year was, as a rule, broken into two terms: A winter term with a man teacher, when the big boys were mostly in attendance—this was usually the longest session and the best attended; there was a shorter session in the summer, with a woman as teacher. The scheme of studies in these one-teacher schools covered anything from primary subjects to and including mensuration, algebra, geometry, grammar, geography, astronomy and natural philosophy, botany, and composition. The average attendance was generally less than 50 per cent of the enrollment, and the length of term varied from a few weeks to 12 months. The usual pay of teachers was about \$75 per quarter, and in some cases women received more than men.

In 1841 Gov. Comegys makes an appeal in his message to the assembly in behalf of the schools.² He says:

That our system [of schools] has been the means of effecting the most incalculable benefits, I believe its greatest enemy will not presume to deny. In such of the districts as have been distinguished for vigor and unanimity in its promotion, it has answered the expectation of its friends. * * * But it has shared the fate of everything else which is valuable in society—it has been opposed and denounced; and at this moment there are many who would gladly see it razed from its foundation. Of some Utopian scheme, all profess to be the advocates, but many, who are apparently the loudest friends of a free school system, are decidedly hostile to any other than one supported exclusively by the school fund, without the aid of the people, and devoted entirely to the education of poor children. * * * The taint of pauperism * * * would be an invincible barrier to its success. * * * The mental culture of the youth, like every other matter of public utility, should properly be the business of the State.

I do not wish it to be inferred * * * that I am insensible to the defects in the plan of instruction at present in operation. * * * The existing law provides annually for a superintendent in each county. As no compensation is given to the superintendents, it is difficult to secure the services of any one disposed to give the requisite attention to his duties. The consequence is that the State has no official information in regard to the progress of the schools or the operation of the system. As it is important that it should be furnished, annually, with a report, it has occurred to me that the office of superintendent, in each county, might properly be abolished,

¹ This cause of complaint was removed by the act of Jan. 29, 1841 (ch. 283, p. 316), which provided that the school tax might be collected by collectors of the district or by collectors of the hundreds who were appointed by the levy court or the court of appeals in each county, or by a special collector appointed by the school commissioners.

² Message of January, 1841, separately printed. Dover, 1841, pp. 4-7.

and a general superintendent for the whole State created. By appointing a competent individual, giving him a reasonable salary, and imposing on him such duties as should naturally devolve on one intrusted with the general oversight of the whole machinery of public instruction, much good might result to the system, its movements be accelerated, and its advantages more widely diffused. As another means of improvement, I would recommend that higher qualifications on the part of teachers be required, and the business of examining and licensing them be confined to the superintendent alone. * * * It also would be a gratifying alteration * * * to prevent the high degree of excitement at the annual school elections. The bickerings and animosities, * * * the excitement grows out of the opposition of young men who have neither children nor education * * * an exemption of such persons, and of all persons whose assessment does not exceed \$300, from school taxation, would remedy the existing evil. Whether it would be advisable to repeal the provision authorizing a vote, and insert one directing the levying a tax as other taxes are laid, I leave to you to determine. It is foreign from my intention, however, gentlemen, to recommend measures of doubtful expediency, or which would hazard the continuance of the system.

The reader has noticed that in this plethora of words there are elements of strength and wisdom: A declaration in favor of a public school system; a recognition of the failure of the pauper school idea, but indications that that idea was still alive; a modest and cautious suggestion of the necessity for a State superintendent and of a State school tax.

The truth of the matter seems to be that the people of Delaware had done nothing so long, had spent so many years under a highly decentralized system that they had practically ceased to think in the terms of any other system. The thing that terrified them most was centralization. It became a term to conjure with. Thus when Judge Hall thought it desirable to add a long exhortation to his edition of the school laws printed this same year (1841) in behalf of the care and encouragement of the public school system, he did not fail to put in a word of warning by pointing out the terrors of centralization as exemplified "in the much applauded system of the King of Prussia."¹ To warn against Prussian centralization in Delaware at that time was like warning against floods in the Sahara or icebergs on the equator.

But even the centralized Prussian system was not without its advocates in Delaware, as against the system of perfect freedom then the law in the State. "Some persons complain of this system [the one in use] as defective; they say it wants power, and they insist upon applying to the legislature for more law," says Judge Hall, and he seems to have felt it his duty to oppose this idea, so that all power might be kept in hands as near as possible to the people and that every ascending officer be made correspondingly weaker than the one below. Judge Hall has been well called the founder of public schools in Delaware. This is true, but it should be

¹ See School Laws of Delaware, Wilmington, 1841, pp. 31-44.

added that he built on a foundation so narrow and so hedged in by limitations on the power of initiative that a strong State system was, under the conditions, impossible of development. Judge Hall is the father of the schools, but his fear of centralization condemned them to a field of restricted usefulness. He believed in education for all, but of the meaning of public schools as the term is understood to-day he had little conception. He was by far too much of a strict constructionist to found a State system.

In January, 1841, Judge Hall, as superintendent of New Castle County, presented a formal report on the public schools to the general assembly. It is the only report of the sort which has come under the observation of the writer, and is not in reality a report at all, but a review of the school situation, an argument of the same kind as the preceding item and mainly against centralization. It is worth attention, for it gives some insight into the school situation in the State and also shows how its supporters regarded it. Judge Hall remarks that, as there was no legal requirement on school committees to make reports to county superintendents, none had been made. He felt the need of such and urged that the system be strengthened to the extent of giving superintendents the power to require such reports and to obtain information in such other ways as would enable them "to exhibit the true state of all the school districts within their county" and that a salary should be annexed to the office. But this did not to his mind mean centralization, for "there is error in looking to the system to do what the people must do. The design of the system is not to make schools by its operation, but to enable and invite the people to make schools by their own agency." The general assembly had exercised toward the common schools "enlightened liberality," and in no State, except Connecticut, was there "so generous public provision." "The school districts are organized to manage their own schools according to their own judgments." If the people neglect this opportunity, the general assembly can not assume it for them. The assembly might as well undertake to educate the children—

without their going through the wearisome process of study and recitation, as to provide a system of schools to work well without the care, and pains, and diligence of the people interested in them. The great need is to awaken the people on this subject.¹

Judge Hall, however, had made progress in the matter of taxation since he wrote the law of 1829. It will be recalled that there was no provision in that act for taxation for schools. He now referred to the discussion on the subject of such taxation which took place in the New Castle County convention in 1839 and declared "to deny taxation in a school system is to resolve upon the end without the

¹ Printed as a supplement to his edition of the school laws of that year (Wilmington, 1841), pp. 45-55.

means." The suggested amendment was that the levy court should "assess a school tax upon the taxables of every school district, to be placed to the credit of the district, and paid over to its school committee." The amount of the tax was to be so regulated as to equal the dividend received by the district from the school fund the previous year, but the district was allowed the right to prescribe a larger sum. "The hundred assessors could be required to estimate the clear rental value of the real estate in the school districts * * * so that the assessment could be made upon the principle now prescribed by the school laws." This would always give them a school "as a certainty."

Judge Hall then came back to the supply of teachers: "This difficulty is not confined to our system; it prevails throughout the Union." In Massachusetts the difficulty has been met by the normal school, but this kind of school has been adopted from Prussia; "absolute power can readily form a system of education, perfect in the exhibition—a regular gradation from top to bottom, each part holding up that below, and upholding that above it. Such is the Prussian system; and learned men, curious in these matters, seem disposed to make it their pattern." He summarizes his faith in the following clear-cut and luminous statements:

We want a supply of teachers for common schools, such as our districts can employ in their common schools, and sufficient for all our common schools. Teachers educated in normal schools may have special qualifications of superior value (although as a general position this is doubted, it is believed to be a notion); but such teachers can not be teachers of common schools; common schools can not employ them; for common schools, we must have a supply of such teachers as common schools can employ. * * * Colleges supply their own teachers. * * * Why can not scholars of common schools, having gone through a course of education in them, likewise become teachers of what they have learned?

Meetings of the New Castle County convention were held in 1841 and 1842, but their proceedings have not been available.¹ In 1843, 72 delegates were present from 32 districts, and Morton McMichael, Esq., delivered "an eloquent and highly interesting discourse on the advantages of common schools."

The main business of this session seems to have been to listen to a report by Judge Hall on the proceedings of the State school convention held in Dover in January, 1843. That organization discussed a proposition "to change the law so that the levy court of each county shall lay a tax upon the taxables of each school district, of at least \$50, to be collected and paid into the county treasury." The proposed change was at first approved by the convention, but after adjournment the reactionaries prevailed and the earlier action

¹ No journals for these years have been found; and Miss Hasee, in her Index to Documents of the State of Delaware, marks them also as "not found" (pp. 55), but Newlin in his address before the Delaware Legislature in 1867 (p. 11) says "New Castle County has held 21 conventions" and the Delaware State Journal for Sept. 2, 1842, has an announcement that the school convention was to meet on the 6th.

was reversed. There was, however, considerable sentiment for such a law. Kent County, in fact, insisted on a larger sum than \$50 "as proper to be raised in each district."¹ In that county one school district had asked and obtained "a provision by law to raise by tax more than \$300, by vote of the district" and there "a very praiseworthy spirit in favor of affording to the rising generation the facility of good common school education prevails."²

The meeting in 1844 was more numerously attended than in the previous year. The reports were fuller and the discussion both more animated and of more general interest. There was one on textbooks which carried a recommendation of a uniform series, including the books of Salem Town and the histories of S. A. Goodrich, but with all of their argument and recommendations the separate reports continue to show little uniformity in the texts used, for the compelling force of law was absent. A subject of much more importance was that which proposed to ask the legislature to take "into consideration the propriety of appointing some general superintendent to whom the supervision of common-school interests shall be confided." This resolution was proposed to the convention, but Judge Hall was against it. True, no particular name appears in opposition, but the old arguments used are his—the voice of Jacob was there. It was pointed out that Delaware was able to make a larger contribution from its school fund for education than any other State. Connecticut distributed the year before \$80 per district, but Delaware distributed \$137, and it was declared that the State must depend on the general intelligence of the people to advance the schools:

The great question is, *How can this most certainly be done?* It is positively denied that the confiding of our common-school interests to the supervision of a general superintendent, or the incorporation in our system of any salaried officer, is adapted to this purpose, or to produce any good. Such an officer might make a show of our schools on paper, but he would do nothing to make them better. He would take no part practically to improve the schools. Those least capable of doing are usually most fluent to tell *how* to do. * * * The law gives the people of every school district power to organize and act as a body upon the subject of a school; they can thus have as good a school as they please to provide for; in no school district in the State where reasonable pains have been taken to have a good school has there been a failure; the law gives as much power as is necessary or safe; * * * let the school voters of each district feel the responsibility of the charge which the law devolves upon them. * * * It is believed common schools can be improved in no other way.

¹ By act of Feb. 22, 1843, District No. 18, in Kent County was allowed to charge tuition for the summer quarter (ch. 474, acts of 1843, p. 537). It was to be collected by the collector of the districts, but this law was not to go into force until the district had raised \$300 by the usual methods.

² This is the end of Judge Hall's report on the State convention of 1843. Powell (p. 147) refers to it, quoting from *Barnard's Journal* (XVI, 370), which probably quotes this report to the New Castle school convention for 1843, p. 2. I have been able to find no other contemporaneous reference to this State convention. There is no mention of it in the *Delaware Gazette* (Wilmington) for Dec. 30, 1842, Jan. 6, 20, Feb. 2, 1843; nor in the *Delaware State Journal* (Wilmington) for Jan. 3, 6, 10, 17, 20, 27, Feb. 3, 1843. No other contemporaneous newspapers have been seen.

And yet, had the author of this report taken the time to reflect on the figures sent in to this convention from the school districts of New Castle County, he must of necessity have soon come to the conclusion that nothing approaching uniformity or universality in education could ever be expected in that county, at least till some compelling power brought down from above should force it. This the subsequent educational history of Delaware most abundantly proves, for in 1844 some districts in New Castle County had schools, some had not; some reported and some failed to report; some kept the school open for the school year, some for 11 months and some for 4; some had an average attendance of 50 per cent and some of 37½ per cent; one paid as much as \$525 per year for teachers and another hired its teachers for four months at \$9.37½ per month. Some included Latin and Greek in their courses and taught not only Horace, Juvenal, and Homer, but also algebra, geometry, history, and bookkeeping, while others confined themselves to the rudiments. Some levied a moderate and proper tax for school support, others clung to the outgrown idea of contributions; some made instruction free, others demanded \$1.25 "from each scholar"; uniformity in textbooks was recommended, but could not be enforced; while the texts used and the courses given varied according to the school and the teacher.

From these reports it would seem that the schools were suffering from that excessive liberty which was theirs under the law and for which Judge Hall plead so insistently. Granting his great service to the schools time and time again, it does seem that here at least he was a retarding factor, not a leader or organizer.

The lack of organization, and the consequent disadvantages, made itself felt also in the inability of those interested in the broad subject of education from getting their discussions and arguments easily before the people. There were few organs of publicity accessible. Judge Hall used the journal of the New Castle school convention for the views of the conservatives. The progressives replied in various ways. In 1845 this took the form of a report to the general assembly on the public schools of Kent County, by Charles Marim, county superintendent, who under the guise of a county report to the legislature discussed the school situation in the State. It will be quickly noticed that his opinions vary widely from those of Judge Hall, whose report on New Castle County in 1841 has been quoted already. Mr. Marim had been superintendent of Kent County for some years; he had visited the schools and had studied them at first-hand and by personal inspection. He writes that his tour in 1842 "was attended by circumstances well calculated to inspire emotions of the most agreeable character."

His conclusions were that the system was to a "great extent useful," was gradually overcoming the prejudice of earlier years, and that any attempt to repeal the law in existence would mean the political death of the one who attempted it. Some schools were almost models, and as such the schools of Smyrna and Cantwell's Bridge are named, but the system was not without faults. His opinion was that—

No efficient plan could be devised for educating the great mass of our population which is exclusively supported by a public fund, unless a compulsory provision is incorporated in it, similar to that which prevails in Prussia, obliging the people to school their children.

He recognizes the scarcity of good teachers, urges that arrangements be made with Delaware College in this regard, and points out the fallacy in Judge Hall's argument that they might be taken out of the schools themselves. He suggests the desirableness of an examination of teachers and urges the appointment of a State superintendent with an adequate salary, saying:

At all events, I am thoroughly satisfied of the necessity of placing at once a *head* to our school system. It is now without one, and we can not expect it to proceed with uniform prosperity until this deficiency be supplied.¹

In 1845 the attendance at the county convention was smaller than in 1844. They discussed again the subject of general taxation and appointed a committee to collect school statistics. They considered the incautious way in which teachers were employed and the deficiency of libraries; they considered the importance of having the cooperation of women in their work and invited them to attend the next session of the convention as spectators. The reports on the schools did not differ from those of earlier years, nor did they differ in 1846 when Judge Hall delivered an address.

From about this time it becomes evident that there had been developing steadily since the first passage of the school law in 1829 two parties in the State who considered the administration of the schools from opposite standpoints. The party which had been constantly in power were the decentralizationists, under the leadership of Judge Hall, who insisted on the most complete liberty of action. The districts were formed by legislative action; when this had been accomplished all was then left to individual school district initiative, with what disastrous results is everywhere early and openly manifest. Even Judge Hall recognized this possibility of weakness, but only Acting Gov. William Temple had a superior way of settling these difficulties, for after animadverting on the criticisms on the school laws he declared that in his judgment—

these difficulties arise from the natural imperfections of the human heart, rather than defects in the existing law; time and experience will eradicate the evils, while too much legislation might aggravate rather than remove them.²

¹ S. J., 1845, p. 43-52.

² H. J., 1847, pp. 19.

The other party we may call the centralizers. They were in the minority for a generation, but they began to make themselves felt in spite of the eloquence and earnestness of Judge Hall. They insisted on a general and uniform system of school taxation for the State and that a State superintendent should be appointed through whose efforts the local systems might be unified and the work made uniform. They brought the subject up year after year in the New Castle County conventions, but Judge Hall was always on hand to oppose their plans. The two parties agreed on certain elementary principles—(1) that the only just and proper way to raise the needed funds was by taxation; and (2) that the schools should present an equality of opportunity for all. Judge Hall rendered a service to the State in driving this idea home:

With respect to the dividend from the school fund being for the poor, the notion is both false and injurious. In all our institutions the poor and rich are upon the same platform; we allow no distinctions formed on these conditions. We measure man's worth by intelligence, capacity, moral excellency—and consequent usefulness; not by dollars and cents. In school the poor man's child is as independent as the rich man's; there is no more charity for one than the other. The dividend is intended to encourage and help the district to form a good school for all.¹

So far, and it will be noticed that this statement goes beyond the original law of 1829, the two factions were together; in other respects they were as far apart as ever. In this same address Judge Hall holds up again to his terrified spectators the bugaboo of Prussian thought on education. He adds further:

Yet there is a strong disposition in this country to conform school systems to the Prussian model. In the report of the Board of Education of Massachusetts of last December, it is stated: "The cardinal principle which lies at the foundation of our educational system is that all the children of the State shall be educated by the State." Now let it be distinctly remarked that this is not the principle of our school system; but that our system is founded upon the position, the people must educate their own children; and all the State should do, or can do for any useful effect, is to organize them into communities so as to act together for that purpose, and help and encourage them to act efficiently.²

It is evident then that one of the tasks before those who hoped for a well-organized uniform school system in Delaware was to overcome this decentralizing influence. This was evidently the purpose of the convention in 1845 and 1846 when it recommended that the voters in each school district hold a special meeting in the coming December—

to consider the expediency of applying to the legislature for the passage of a law providing some general system of taxation, for raising in the districts the sum that must be supplied in addition to the dividends from the school fund—in order to elicit the public feeling in relation to that important measure.

¹ Proceedings New Castle County convention, 1846, p. 15.

² Proceedings New Castle County convention, 1846, p. 11. The same idea had been expressed in almost the same language in the Delaware State school convention in January, 1843, in Dover. See *Barnard's Journal*, xvi, 370, and *Powell's Education in Delaware*, p. 146.

Evidently the opinion of the leaders had somewhat changed since 1843.

The reports to the convention in 1847 would seem to indicate that more success was attending the various efforts to get accounts of the workings of the schools. It is evident that much progress was being made, but the reports indicate that the schools were still grievously undermanned, that schoolhouses received little attention, that benches and desks were but poorly adapted to the needs of the children, that school libraries were almost entirely wanting, and that there was no grading of pupils and little uniformity in textbooks, in courses, or in the taxes levied. The pupils were substantially evenly divided between the sexes, but the attendance was everywhere poor. On the other hand the length of the school term was much longer than might be expected—the schools being open in many cases, according to report, all the year—but, while the teachers were overworked, they were miserably underpaid. As a rule there were no other schools (apparently private schools) reported in the districts, but an “increased desire of mental improvement” seems to have been general. The condition of school sentiment in Kent and New Castle Counties was contrasted. In Kent there was little opposition to the schools and no school convention; the county had only half as many children of school age as New Castle and yet those who attended no school were twice as many in Kent as in New Castle. The difference is attributed to the work of the school convention which now also urges the organization of a county teachers’ association and boldly asks the commissioners of the school districts “to permit their respective teachers to devote one week during the year to the attendance upon such association.” The necessity of organization and centralization was becoming more and more evident.

The sum of the reports for 1848 was that the schools were improving, that opposition to taxes was disappearing, and that—

in all districts where the money is raised by tax the sum raised is liberal, and the school is easily supported and prosperous. Where there is no tax, but the money raised by voluntary contributions, the sum is stinted and inadequate, and the schools drag heavily.

In February, 1849, Judge Hall presented to the general assembly a lengthy document which he called a Report on the Schools of New Castle County. It is in reality a review of the school situation, an examination of the difficulties and of the faults of the system in use, and an extended argument against change. This position is natural for the system in use was Judge Hall’s own evolution, and the experience of 25 years had not caused him to alter his opinions.

He admitted that there were weaknesses in the system as administered. Some of these were little less than deliberate frauds prac-

ticed on the public in the interest of the district or of individuals in the district.¹ He had no remedy for these abuses. He argued that "upon the principles of our institutions there can be no remedy" if the people "set no value on education" and so consign all depending on their care to "ignorance and degradation." He insisted that "the evil will cure itself, and the cure, although too slow for our anxieties, will be the best that can be devised in its ultimate effects." He claimed, and no doubt with perfect truth, that these abuses had been much made use of to injure the schools, and then adds:

The desideratum is to form a right public sentiment through which the people will engage and become active to provide good schools for their children. With this public sentiment nothing else will be necessary, for the people once engaged will not stop short of anything ascertained to be needful, but without it nothing else will avail. Beneficent bounties will not—this we see in England; power can not—this we see in Prussia; the people themselves can accomplish it by putting forth their own efforts, as seen in Scotland and New England.

To those who were disposed "to force up our school system by compulsory law" he replied that "when we resort to compulsion, whether of law or other means, we foster tempers, in ourselves, arbitrary and overbearing, and in them perverse and obstinate—both parties are made worse."

To those who favored the employment of "agents, as superintendents, lecturers, or otherwise, to go among the people and arouse them to effort," Judge Hall answered that such an officer is not necessary to find out the condition of particular schools; that the auditor has ample power in the matter of finances, and that a redivision of the counties so as to even up the inequalities in the districts would put all these complaints at rest within two years. In discussing the matter of a State superintendent he declared that all of his duties were already provided for by law and proposed that the New Castle school convention should be turned into a similar meeting for the whole State.²

The convention of 1849 went back to basic principles and devoted itself to a discussion of the question whether it is "right and proper to resort to taxation to support common schools." It would seem that this subject had been settled long before, but the "affirmative was carried with only one dissenting vote." More attention was given by this convention to the condition of schoolhouses. The

¹ In a special report to the legislature in 1843, S. Spearman, then State auditor, said:

"In settling the school accounts of the respective school districts in the State the auditor has found it impossible to look behind the vouchers presented by the respective school communities who came before him for settlement. It is believed that much peculation is practiced upon the fund paid to the respective districts for the purpose of maintaining schools by those who disburse the money. This idea was first presented from noticing how much more money it required to pay the contingent expenses of some districts than others under like circumstances and condition. This evil may be remedied by compelling the clerk of each district to cause to be published * * * the account which shall be settled by the auditor." S. J., 1843, p. 66.

² H. J., 1849, pp. 214-225, and S. J., 1849, pp. 120-124.

reports of the separate districts were now tabulated for the first time. The figures are so imperfect that it is doubtful if they are of any value, but the principal figures are given for what they are worth:

36 districts in New Castle County raised \$6,342.50 by tax for the use of schools, being an average of \$176.20.

5 districts raised about \$300 by subscription.

37 districts had 394 months of school, or nearly 11 months each; 10 districts reported their school as kept for 12 months.

26 districts reported 2,392 children of school age, or 92 to a district.

34 districts reported 1,451 boys and 1,278 girls enrolled, while 6 districts reported 394 pupils, enrollment not divided by sex.

29 districts reported that they paid their men teachers \$2,066 per quarter, being an average of \$71 each, and 16 paid its women teachers \$799, or \$50 per quarter; 1 district paid men \$500 per year, 2 paid \$400, 6 paid \$300, and 1 paid \$18 per month.

73 districts reported 36 schoolhouses, the largest of which was 30 feet square; about half of those reported were "comfortable" or "convenient" and improvements in others were promised.

Of the 40 reporting on the "condition of school" a large majority gave the situation as favorable, but these would really be the schools most ready to report, and it may safely be assumed that the condition of the 33 from which no reports were received was less prosperous and that they met with more opposition.

No proceedings of the school convention for 1850 have been seen. The Delaware Gazette for August 23 announced that it was to meet on September 3 and that the subject for discussion was "What should be the standard of instruction in common schools?" The meeting was held, but evidently was not up to standard, for the Gazette says in its issue for September 6: "This body was quite numerously attended on Tuesday last, but we fear that the enthusiasm in the cause is not as great as it should be." It would seem that its proceedings were not published. No copy has been seen, nor has reference to such been found.

In 1851 Gov. William H. Ross, in his inaugural address, analyzed the school situation accurately and declared that other States had provided themselves with "a much more liberal and extensive system of general instruction than we have yet adopted." He urged "such a revision of our present school laws as * * * will best adapt them to the increasing demands and necessities of the times." He referred to the "utter inefficiency" of the plan then in use, declared a large part of the funds raised under that system was "wasted and misapplied," and recommended—

a tax sufficient to sustain the schools in regular operation, without any intermission of time for the want of funds, which tax should be levied, collected, and paid over to the county treasurer as all other taxes are, and by him distributed pro rata.¹

But it would seem that the various parties, cliques, and factions in the State, while all wanted in a general way to advance the in-

¹ H. J., 1851, pp. 157-158.

terests of the schools, could not agree on any common plan of action. They were working at cross-purposes with each other, and each sought to advance his hobby rather than come together and agree on some constructive program. Thus the New Castle convention in 1851, instead of taking up and urging the governor's suggestions, branched out and had some discussion on the architecture of school-houses and on the necessity of school libraries. It was urged also that information be collected on the state of the school districts; that the school commissioners visit the schools at least once a month; that the commissioners appropriate a certain part of their income to the purchase of suitable schoolbooks which were to be resold to the children at cost, in this way reducing prices and promoting uniformity; the question of equal payments to large and small districts was considered, and it was proposed to employ an "agent" whose duty it would be to visit—

each school district and district school in the county, to diffuse information, and by private intercourse and public addresses excite in parents and children higher regard for school privileges, more concern for school advantages, juster views of what schools should be, and what accommodations should be provided—as schoolhouses, grounds, and fixtures—and deeper general interest in this all-important subject; also to collect statistics relative to the schools.

This proposition came very near to the superintendency of other States and this centralizing tendency did not fail to attract the attention of the conservative decentralizers, but they allowed it to pass and contented themselves with a brief review of what their local, decentralized system had done:

It is not 20 years since our school system went into operation. In the outset it was met by determined hostility. Every step of its onward movement has been resisted by inveterate prejudices, intense selfishness, ingenious sophistry, and unyielding interest and ignorance. Against these influences there has been no compulsion, no excitement, not even positive requirement of law, nothing but the voluntary action of the people meeting and voting in their districts according to their judgments. So far as there has been any bias, it has proceeded from the adverse causes which we have noticed. In furtherance of the system there has been nothing but its merits dispassionately appreciated by the good sense and sound understandings of the school voters.

The writer then proceeds to reinforce his conclusions from the reports. He says that the lowest sum raised by taxation out of the 44 districts reporting in that year was \$50; in two districts only was the sum thus raised so low. The average raised in all the districts was \$173 to the district. In 1838 the average was little more than \$100 per district. Only one district in New Castle County contented itself with the legal minimum of \$25; more than half the districts raised from \$100 to \$300, with an average of \$160. There was "substantial evidence of general and growing appreciation of common schools by our citizens;" 39 districts out of the 44 reporting raised

their school money by taxation, and out of the 57 districts which had reported in the last two years 51 had used the tax method.

The convention of 1852 was rather more aggressive in tone, and devoted itself mainly to reports on schoolhouses and ventilation. These do not present a favorable or encouraging view of the situation, and the old fight over the voluntary character of the tax law was also renewed. One district condemned the existing system, referring to it as "the present odious school law," because it left the districts at liberty to do each year as they saw fit. The conservatives defended the law and uttered what they evidently thought to be an unanswerable argument: "The law is established and we can not alter it. * * * It is further believed that there is no need of a change."

The convention of 1853 shows women as members for the first time. Teachers were also present as such, and an effort was now made to compile a teachers' directory. A committee was also appointed to memorialize the legislature to change the school tax law for New Castle County and put it on the same footing as other taxes, indicating a step in advance by the progressive forces. The demand for an "agent," voiced in 1851, is renewed, and he is now boldly called a "superintendent," his duties being missionary in character. Under the remarks is added a long and eloquent plea for improvements in the schoolhouses and an encouraging report on the condition of the schools in New Castle County, where 45 schools out of the 77 districts reported and 43 raised money by taxation. When apportioned "among the number of scholars reported from these districts" it was found that there was raised for each scholar in Brandywine Hundred, \$2.84; in Christiana, \$3.35; Mill Creek, \$1.85; White Clay, \$2.54; New Castle, \$3.40; Red Lion, \$3.09; Pencader, \$2.83; St. Georges, \$4.91; Appoquinimink, \$2.75; average of all, \$3.02. It was found further that New Castle County raised more money by taxation for schools than it received from the school fund by more than one-fifth. On the other hand, Sussex raised little more than one-third as much by taxation as it received from the fund, and the average for each district was only \$39.04¹.

The situation in Kent was better than in Sussex, but not so good as in New Castle. In Kent more than half as much was raised by taxation as was received from the school fund. Twelve districts in Kent raised only \$25 each, which was the minimum amount necessary to draw the proportion due from the school fund; 11 districts raised \$50 or more; 6 exceeded \$100, and 4 raised more than \$150 each. In 28 out of the 52 districts in the county there was ground to believe that there was "a spirit of school improvement." The

¹ See also the Table 3, p. 171.

United School Districts in New Castle County were the only ones which raised as much money as was needed; United District Nos. 23 and 75 (Christiana and Brandywine) raised \$900; Nos. 45 and 46 (New Castle) raised \$2,000, and Nos. 9 to 18 (Wilmington) raised upward of \$8,000, but "in no other districts in the State is there sufficient money raised for making their schools what they ought to be." This report then presents a statement of the comparative increase in the amounts raised in the various counties as follows:¹

Amounts raised for schools.

Counties.	In 1834.	In 1841.	In 1852.
New Castle.....	\$6,986.55	\$8,997.00	\$12,650.00
Kent.....	4,230.00	6,597.00	5,108.00
Sussex.....	2,845.15	4,067.00	3,501.00

It was thought that these figures in the three counties showed the good effects of the New Castle school convention and "make apparent the disadvantages in Kent and Sussex for want of means to direct the attention of the people to their common schools." And, as usual, in a long and eloquent harangue it was denied that any of these disadvantages were to be traced to the faults in the voluntary law. It is evident that sentiment in the county and in the convention itself was crystallizing into a demand for a compulsory tax law; the convention had this year even dared make such a recommendation to the assembly and the governor had done the same. All this was hard on the conservatives, and the writer of the report, presumably Judge Hall, labored faithfully to stem the tide which was setting strongly in favor of a general State law. Again use is made of the bugaboo of Prussian absolutism, and it was argued that "contention and agitation, controversy because of difference of opinion, are the price of liberty."

The proceedings of the conventions for 1854 and 1855 are the last available. There is now an evident change in the tone of the convention. It was becoming more specific in its demands, more definite in its work, and deals less in glittering generalities. It would appear that those in charge were coming more and more to be the real teachers of the State and not mere friends of education. This is seen from their resolutions. They demand that a superintendent of schools for the county be appointed "whose duty it shall be to visit the schools and to note the state of the houses and furniture and to examine the pupils and inspect the mode of teaching adopted in the different schools." A bill was drafted embracing these and other

¹ The rate has not been worked out for other years, but in 1858 the sums raised by contributions and taxes for schools in New Castle was about 14 cents on the hundred dollars of taxable property; in Kent it was 13½ cents and in Sussex about 6½ cents.

amendments to the school law and presented to the general assembly of 1855. It even passed the house, but was defeated in the senate.¹

The organization of a teachers' institute was also proposed by the convention, and it was suggested that the "people of the districts would do well to display a proper liberality and pay the expenses of their teachers while attending these meetings." An improvement in the quality of teachers was urged and steps were taken to establish a monthly school journal.

The Delaware Gazette (Wilmington) reports the proceedings for 1855 and shows the fortunes of the programs advocated in 1854. Dr. Grimshaw, in reporting on the fortunes of his School Journal, said that he had received more letters of encouragement from other States than from Delaware and that want of support had caused its suspension. With astonishing loyalty to an ideal the convention discussed the question of its revival. It was reported that the teachers' association idea had also failed and for the same reason—lack of interest on the part of the teachers and others.

A step in advance is shown in the recommendation that textbooks be bought out of public funds and made free so as to "remedy the present defects in school classification." A list of books suitable for use of the public schools was reported. It included: Holbrook's Child's First Book in Arithmetic; Stoddart's Intellectual Arithmetic; Greenleaf's Common School Arithmetic; Davies's mathematical series; Tower's Intellectual Algebra; Mayhew's Bookkeeping; Northend's Dictation Exercises; Monteith's Manual of Geography; Connell's Primary Geography; Ackerman's Natural History; Swan's Speller or Fowle's Common School Speller; Sanders's readers; Parley's first, second, and third books of history, combined with geography; Grimshaw's History of the United States; Willson's American History; Willson's Outlines of History; Shurtleff's Governmental Instructor; Tower's Grammar; Johnston's or Parker's Natural Philosophy; Comstock's Chemistry.²

This school convention was organized for and was mainly confined in representation to New Castle County, but it is evident that in influence and leadership it was as large as the State. It was doing much to break down hostility to State taxation, and thus became the main factor in putting the question of school support beyond the power of the annual caprice, narrowness, and prejudice of the average voter. The conservatives were still nominally in power, but it was becoming more and more evident that the old order was gradually giving place to the new, and that the tenacious adherence to certain

¹ Barnard's Journal, xvi, 372. See also H. J., 1855, pp. 203-205, 324. In 1853 an effort had been made to obtain from the legislature the appointment of county superintendents, with a definite salary, and with power to visit the district schools, collect and diffuse information, and by private intercourse and public addresses arouse a keener interest in public education. The program failed, but it is evident that the effort of 1855 was a revival of the same idea.

² See reports in the Delaware Gazette (Wilmington) for Sept. 7, 1855 (in Library of Congress).

forms because they were supposed to represent a purer democracy was gradually yielding before a centralizing tendency demanding results rather than satisfying itself with mere empty theories of government.¹

The last school convention of New Castle County seems to have been held in 1855.² Its place was substantially filled by the "convention of the friends of education in Delaware," which met at Dover on January 15, 1857. There had been an earlier State convention in Dover in January, 1843, and some reference to its discussions has been had in this paper already, but it would seem that the spirit of individualism and of decentralization had then been too strong for united State action and the movement failed. Its revival in 1857 was another indication of the growing demand for State educational solidarity. The convention of 1857 drew up a series of resolutions which were presented to the legislature then in session. The convention recommended: (1) That the taxation for public schools be made permanent and that a State superintendent be appointed; (2) that the school commissioners be elected for three years, one each year; (3) that the State be redistricted; (4) that provision be made for securing good teachers; (5) that normal schools were "indispensable and vital" to the success of the system.³

It will be noticed that the first, third, and fifth resolutions had been opposed by the conservatives. The State was evidently now breaking away from their leadership.

In 1857 Gov. P. F. Causey reported that during the previous year some \$53,000 had been expended for the use of the free schools, and that over 12,000 children had been in attendance. He suggested that provision be made for "a higher grade of instruction for such children as may, in the free schools, show the strongest evidences of talent and merit" and recommended the appointment of a "superintendent for the State, or one for each county, with a proper compensation, whose duty it shall be to visit annually all the schools in his jurisdiction, and make report."⁴

In 1859 he warned the legislature that, unless some step was taken speedily toward the improvement of the public schools, the State would soon find itself "far behind" nearly all the others. He then continues:

In many, I mourn to say very many, of our free schools, the pupils have graduated nearly up to the level of their teachers when they have learned to write their names and to read without spelling out their lessons. * * * Our State ought at once to

¹ Proceedings of School Convention of New Castle County, Del. Years seen: 1836, 1837, 1838, 1839, 1840, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1851, 1852, 1853, 1854—all in Bureau of Education Library. There is a brief summary of these meetings in Barnard's Journal, xvi, 360-372, on which is based the summary in Powell's Education, 145-147.

² The convention of 1855 agreed to meet again in 1856, but no report of such meeting has been seen.

³ S. J., 1857, p. 54.

⁴ See his message of Jan. 6, 1856, in S. J., 1857, pp. 11-12.

be redivided into school districts, and every district provided without delay with a properly constructed schoolhouse and fixtures, and a teacher capable of instructing in all the branches of a thorough and substantial English education. * * * This subject * * * has been the theme of much debate in our legislative halls for many years, and yet each succeeding session has ended in little or no alteration for the better.¹

Gov. Causey was succeeded by William Burton, who in his inaugural two weeks later declared:

It is a melancholy fact that in our State, * * * any free white person should arrive at lawful age without being instructed in the first rudiments of an English education. Yet the last census tells the sad tale that there are in Delaware 4,536 white native-born persons who can neither read nor write. * * * In some districts schools are only kept open sufficiently long to exhaust the fund derived from the State. In others, a majority of the voters deciding against a tax, the schoolhouses are suffered to remain closed the entire year. * * * Party spirit, too, has been known to control the result of a school election.²

Such after 30 years of conservative, laissez faire administration was the condition of public schools in Delaware.

IV. ACTUAL ACCOMPLISHMENT, 1829-1861.

Having thus traced with considerable detail the ebb and flow of sentiment for public-school education in the State of Delaware for a whole generation immediately following the school enactment of 1829, it is now possible to review and take stock of gains to the cause during the period.

It will be recalled, in the first place, that the act of 1829 provided for a purely voluntary system. As Judge Hall characterized it, every school district was so organized that its citizens were left free to say whether they would have a good school, an inferior school, or no school at all. This "free" system broke down at the first trial. The idea of 1829 was to raise funds by contributions. Experience demanded and secured in 1830 an act permitting a tax to be voted by the citizens of the district. This was a step in the direction of a State system. But this advance was quickly followed by a step backward. The act of 1829 required the local districts to raise as much as they were to receive from the school fund; an amendment of 1830 cut this requirement exactly in half; another in 1837 reduced it to \$25, and this beggarly sum was sometimes raised in ways that were in violation of the spirit of the law. But while these unfavorable symptoms were developing, the organization of individual schools was going on. There were favorable reports of the growth of the system as early as 1833, and in his message to the assembly of 1845³ Gov. Cooper could report that all the school districts were then organized with a few exceptions, and proof that the system was winning its way was shown by the fact that every year added to those who availed themselves of the opportunity to use the schools.

¹ Message of Jan. 4, 1859, in H. J., 1859, p. 14.

² Message of Jan. 18, 1859, H. J., 1859, pp. 83-84.

³ H. J., 1845, p. 8.

In the meantime Judge Hall had organized the New Castle County school convention, which, from 1836 to 1855, conducted a continuous agitation looking toward a greater development of the schools. The work of the convention was of value in that it kept the subject of the schools before the people and helped to awaken them to a realization of both its importance and necessity. On the other hand, its influence was confined in the main to New Castle County, and, being under the influence of Judge Hall, it advocated a retention of all power in the hands of the local school district, fought all efforts at centralization, and in 1838 opposed, in an elaborate report, the establishment of a State normal school. But as time went on, and as the individual leaders and educational thinkers of the State passed from a condition of tutelage to one of independence in thought, conservative views began to lose their authority. The necessity for a uniform State tax and for uniform State supervision and control became more manifest.

The centralizing tendency is manifest in the reorganization of the State educational convention in 1857, which after essaying an organization in 1843 had failed to maintain itself before the people. In 1846 teachers' societies were recommended; an association of New Castle teachers was organized in 1847, but failed. It was again organized in 1854 and met with but little more success, but these repeated efforts show the drift of educational thought. The tendency in this direction is also indicated by the publication in 1854-55 of at least four issues of the Delaware School Journal,¹ under the editorial direction of Dr. A. H. Grimshaw, then county superintendent of New Castle. The Journal was published in Wilmington and the first number is that for November, 1854. The prospectus promised monthly issues at an annual cost of \$1:

The Journal will contain about 24 pages of reading matter; it will be devoted to the school question and will also contain judicious selections on literary and scientific topics. This number will be sent to gentlemen throughout the State, whose cooperation we earnestly solicit. The editors do not expect to realize any pecuniary profits from this undertaking, but feel a sincere desire to advance the cause of education and promote the welfare of their fellow citizens.

The scope and plans of the Journal were still more fully set forth in the introduction, which serves also both as an historical review of the situation up to that time and as an outline for future endeavor:

We would beg leave to remark, in the outset, that this is to be a State school journal; its whole object will be to promote the cause of common schools throughout all parts of our State.

We find that nearly all of our neighboring States are making active exertions to improve their schools and advance the cause of popular education; and we note the means employed are school journals, educational conventions, teachers' institutes, and

¹ See Hassé's Index to Delaware Documents, p. 56. The first number was for November, 1854, and at least four numbers were issued, being dated November and December, 1854, and January and February, 1855, of 24 pages each. There is a set in the Delaware Historical Society at Wilmington. The Bureau of Education has Nos. 1 and 3, November, 1854, and January, 1855, pp. 1-24 + 49-72.

district libraries and lectures. In the State of Delaware there is no settled, determined, constant, and energetic action by means of which our teachers can be roused to the necessity of self-improvement or our people interested in that subject of vital importance to the American Nation, the subject of common schools. In this county, with the exception of a few desultory letters, generally intended to produce a local effect, and the annual report of Judge Hall, president of the county convention, there is no effort made to draw the attention of the people to the proper consideration of the school question. In the counties of Kent and Sussex, we believe there is not a line written. This is our apology for attempting to establish a journal which shall contain editorial and original articles upon all the questions which suggest themselves in connection with education, and whose columns shall be open for the reception of communications and the discussion of educational topics.

The people of this State need to be awakened; not only this, they need to be instructed upon the subject of common schools. First we need good schoolhouses, and we must learn how to plan them. Second we need good teachers, and we must devise some means to secure them. Third we need school libraries, and we must acquire a taste for reading in order to establish them. Fourth we need a revision of the school law; that is, our tax must not depend upon the precarious votes of every school election, any more than our county, road, or poor taxes; our commissioners must be made a more permanent body, only one being changed each year.

* * * We have a school fund, schoolhouses, teachers, pupils; but we have not good common schools. * * * It is very manifest that we need some means of infusing vitality into our school system. If the press is a mighty engine, if it can influence the people upon religious, political, and agricultural subjects, it can do so upon educational topics. We have, therefore, because no one else has seized the helm to guide public opinion, taken upon ourselves the office of pilot. We shall endeavor to collect as much information as possible upon the condition of the schools in all the districts of the State; we shall try to ascertain the qualifications of the teachers employed in our common schools, the manner in which the various committees perform their duties, and the number of votes polled at each school election.¹

It was a good plan, boldly conceived and bravely put into action. Had the editor been able to execute his plans as outlined above. had he been able to gather and print information on the subject of the public schools and to make suggestions for their improvement, his work would have been of the greatest service to the schools and to the State. He made a good beginning, and circulated 400 or 500 copies of the Journal, but unfortunately the times were not propitious and, although the editor pledged himself if the first number was issued "to continue the publication for one year," the publication seems to have been suspended with the issue of the fourth number, that for February, 1855. The School Journal died in debt, and the school districts of New Castle County were assessed \$5 each to liquidate the outstanding obligations. The people had not supported the organ intended for their advancement.

During the fifties there were other indications of educational progress. Institutions beyond the public school grade were chartered,²

¹ Prospectus in vol. 1, pp. 1-3.

² Georgetown Academy in 1847; Smyrna Union School in 1853, ch. 643; Wesleyan Female Collegiate Institute, changed to Wesleyan Female College by ch. 152, laws of 1853; Delaware City Academy, 1857, ch. 400, and 1859, ch. 598. Scharf, I., 447, gives a long list of earlier private schools with the dates of their charters.

and then there began the reorganization of public school systems in the towns. Thus by an act passed on February 4, 1852,¹ the New Castle Institute, a school "for teaching the first rudiments of learning, as well as classical literature and such of the sciences as are usually taught in academies and colleges," which had been supported in part by the "contributions of individuals whose children receive instruction" and in part out of "the funds of the New Castle Common," was taken over by the town, called Districts 45 and 46 of New Castle County, and became the basis for the new public school system.

The first organization of the Wilmington schools followed closely on the passage of the permissive law of 1829. The city was then divided into 10 school districts, but there was powerful opposition; only in the tenth district did the school become permanently established, although there were schools for short irregular periods in 2 others. In 1833 there was a considerable sum of money coming to these districts, and the 9 were reorganized by act of February 6, 1833, as United School District Nos. 10, 11, 12, 13, 14, 15, 16, 17, and 18, in New Castle County. A schoolhouse was built on the corner of French and Sixth Streets with 2 rooms of 120 seats each; men and women teachers were employed, and this arrangement continued till 1852, when the conviction of the increasing usefulness of the system made possible the act of February 9, 1852.² This act laid the foundations for a general public-school system for the city. It created a board of public education of 12. They were organized as a corporation, but were forbidden banking powers. They were to take over the public-school system as it then existed and organize and conduct schools for the benefit of white children and levy taxes for support of the same.³

Success followed so quickly on this reorganization that the board could say in its report in 1857:

Instead of about 300 children, miserably accommodated and laboring under many inconveniences, we find 1,800 children, almost all well provided for, in comfortable buildings with neat furniture and arrangements, trained to habits of order, and generally interested in their studies and attached to their teachers.

In 1859 there were seven schoolhouses; Nos. 2, 3, 5, 6, and 7 were used for primary grades; Nos. 1 and 4 served for instruction in the higher grades. There were then 39 teachers and 1,940 pupils. But by this time the needs of the schools had outrun the ability of the city to provide out of its usual income. Authority to borrow was asked of the assembly and granted on condition of a favorable vote by the citizens. This approval was refused, and when the city again

¹ Laws of Delaware, 1852, ch. 523.

² See Hall's *Historical Sketch*, quoted in *Wilmington School Report for 1875-76*, p. 54.

³ Laws of Delaware, 1852, ch. 536; amended in 1853 by ch. 5; and in 1855 by ch. 199; 1857, ch. 430.

asked from the assembly authority to borrow without a popular vote their request was rejected.¹

Supplementary agencies bearing on matters educational began also to take their place in the evolution of a more connected and stronger system. Thus the Agricultural Society of Sussex County was incorporated;² its business was "to promote and encourage agricultural and horticultural pursuits and improvements in good husbandry and tillage of the soil, improvements in the breed of stock of all kinds." Similar in general purpose was the incorporation of the Red Lion Library Association in 1857, with an endowment of \$10,000 capital and a life of 20 years.³

The same year saw the incorporation of the Corbit Library into the school system. Dr. James Corbit had left by will \$950 to St. Georges Hundred, in New Castle County, as an endowment for the purchase of books for the use of School District No. 61 in that county under the name and style of the "Corbit Library." By act of 1857 (ch. 416) the administration of the fund was put under charge of the school commissioners of the district and administered as part of the public-school system.

It is evident that the terrors of the Prussianization of the school system of the State had now largely ceased to terrify, for the progressives were boldly demanding first a State "agent" and later a State superintendent whose business would be to organize a real State system. Indeed, in 1857 a bill embodying some of these demands was passed by the senate,⁴ but failed in the house.

Nowhere is this change of sentiment more manifest than in the feeling on the subject of normal schools. It will be recalled that a report made by Judge Hall and others in 1838 had opposed the establishment of a State normal school and had terrified the timid by picturing the evils of overcentralization. But these fears were neither universal nor lasting in effect, for in 1843 a correspondent of the Delaware State Journal suggested that Delaware College be endowed by the State and then required to educate teachers for the public schools,⁵ and so far had the Delaware of 1857 advanced on this subject beyond the opinions of the report of 1838 that E. J. Newlin, president of Delaware College, on February 17, 1857, delivered an address by invitation on normal schools before the general assembly, and the address was later printed by order of the house. It will be of interest to summarize this address briefly in order to furnish a basis of comparison and contrast with the report of 1838.

¹ See Laws of Delaware, 1855, ch. 203; 1859, ch. 668, and Hall's Historical Sketch, loc. cit., p. 57.

² Laws of Delaware, 1857, ch. 458.

³ Laws of Delaware, 1857, ch. 351.

⁴ S. J., 1857, pp. 151, 161.

⁵ See correspondence of "Z" in Delaware State Journal (Wilmington), January, 1843.

This address is predicated on a petition to the assembly from the trustees of Delaware College pointing out that under the law provision had already been made for the organization, but not for the support of a normal school in that institution.¹ They now ask for an annual appropriation of \$3,000 for the school and suggest that, in the absence of any other method of raising this amount, it might be taken from the annual income of the school fund. This would mean a reduction on the average of \$15 per district, which might be made good to the district by giving to each the privilege of sending one pupil to the school free of tuition charges, making about 200 normal pupils from the whole State who for their part were to agree to teach in the public schools for a certain period. President Newlin begins with the premise that the whole matter resolved itself into the simple question whether the public school should be supplied with competent or incompetent teachers; whether the children should be well taught or imperfectly instructed. Then after reviewing the origin and growth of normal schools in Europe and America he presents his arguments in form as follows:

1. That it is obligatory upon every State in this Republic to give to all her children a good education, by the establishment and support of good common schools.

2. That a State can not have good schools without well-trained and competent teachers.

3. That the only way to secure a supply of well-qualified teachers is by the establishment of normal schools.

It is evident that the realization of the necessity for normal schools was growing in the State. The school was not immediately established, but all of these efforts had their effect. In 1859 a petition was presented to the assembly praying the establishment of a "free college and normal school." The committee to whom it was referred deemed such a move inexpedient at the time—

inasmuch as the proposed establishment has not been fully and fairly before the minds of the people of the State. Your committee being themselves favorably impressed toward the plan proposed, doubt not that the people of the State will, when the subject is fully canvassed and presented to them, extend like favor to it.

They proposed that a committee of six be appointed to draw up a bill, that it be published in three newspapers in the State and presented to the next legislature.²

What then was the educational status of Delaware in 1861 when the first State law went into effect? Unfortunately there are no complete statistics covering all phases of education, and under the system then in vogue in the State there could be none. In the

¹ See p. 7, where reference is given to ch. 43 of the Revised Code of 1852, which, in dealing with Delaware College, sec. 5 provides that there shall be established a normal school "connected with the college for the preparation of teachers." Pupils were to be admitted from the district schools at reduced rates on their pledge to teach one year.

² H. J., 1859, p. 301.

absence of fuller statistics use must be made of the scanty collections found in the censuses of 1840, 1850, and 1860. These follow on this page. To these may be added the statistics in the available auditor's reports between 1830 and 1860. The auditor was the responsible accounting officer to whom reports on the financial dealings of the schools were sent and the only one who had in any sense the power of reviewing the financial doings of the local district school commissioners. The powers of the auditor were ample for any inquiry he might deem proper, but his term of office was short and if not reappointed he must resign it into new hands.¹ The figures of the auditor are both imperfect and incomplete; they are not uniform and the periods covered are not all of the same length, but, as they represent substantially all the statistical material for the period that is available from State sources, they are printed for what they are worth.²

Statistics of education in Delaware.

	1840	1850	1860
Colleges:			
Number.....	1	2	1
Teachers.....		16	8
Pupils.....	23	144	90
Annual income, total.....		\$17,200	\$9,500
From endowment.....		\$1,200	
From public funds.....		\$1,200	
From other sources.....		\$16,000	\$9,500
Academies and other schools:			
Number.....	20	65	40
Teachers.....		94	101
Pupils.....	764	2,011	1,967
Annual income, total.....		\$47,832	\$47,463
From endowment.....		\$235	\$400
From taxation.....			\$400
From public funds.....		\$1	\$422
From other sources.....		\$47,606	\$46,240
Public schools:			
Number.....	152	194	256
Teachers.....		214	286
Pupils (apparently average attendance).....	\$6,924	8,970	11,736
Pupils by families (apparently total enrollment).....		14,216	18,672
Pupils, free negroes.....		187	250
Annual income, total.....		\$43,861	\$67,847
From endowment.....			\$500
From taxation.....		\$14,422	\$32,359
From public funds.....		\$37,763	\$29,020
From other sources.....		\$1,696	\$5,968
Illiterates over 20, total.....	\$4,832	10,181	13,169
Free colored.....		6,645	6,506
Foreign.....		404	1,666
Libraries:			
Public.....		4	64
School.....		10,250	61,100
Sunday school and church.....			1
College.....		12	100
Total libraries.....		2,700	48
Total volumes.....		5,000	20,270
Newspapers.....		17	1
Number.....		10	7,000
Circulation (average).....		7,800	114
Annual.....		421,200	85,470

¹ See governor's message, January, 1847, in H. J., 1847, p. 20.

² See Table 3, at end.

³ Of these, 1,571 were "at public charge." The entry under this heading in 1840 was "primary and common schools."

⁴ White only.

Chapter IV.

THE FIRST STATE TAXATION FOR PUBLIC SCHOOLS, 1861-1875.

The original idea in Judge Hall's bill, which became the school law of 1829, was individual and neighborhood cooperation. It was absolutely and entirely voluntary; there was no supervision by State or county; there was no legal requirement, no compulsion by the State, for the proposal to levy a tax which appeared in the original draft of the bill was omitted in the enacted law. The schools to be established were denominated "free schools," but it was a curious freedom, for "free" meant that their patrons and supporters were free to support them well or ill, or not support them at all, as most appealed to their desires and interests. But this phase of the movement broke down the first year. It was soon seen that voluntary contributions could not be depended on to support the schools if they were to exist at all, and as early as 1830 a State law was passed permitting the school districts to vote a local tax on themselves if they saw fit. This remained the law until 1861 and was a step in advance, but it had fatal objections: The local school district was the unit of taxation; the tax when voted was purely local; it applied only to the local school district and was to be voted each year. The result of this unfortunate provision has been narrated already. There began at once to grow up two parties who differed radically on the administration of schools. The conservatives advocated the status quo. They wanted no change, little or no State interference, and as much liberty of individual action and school district initiative as possible. On the other hand the more aggressive party, whom we may call, by way of contrast, the progressives, wanted a stronger central control for the purpose of supervision and direction in the matter of taxation. Between the two ideals the sentiment of the State swung back and forth for a generation, but during most of this time, despite the activity of the conservatives, and in spite of their much writing on the subject, public sentiment more or less steadily approached the idea of a centralized State control. After much agitation the beginnings of such a State law were finally attained in 1861. This was the first general State law on the subject of taxation for public-school education ever passed in the State.

I. EDUCATIONAL LEGISLATION, 1861-1875.

This act, passed March 1, 1861, provides that it should be the duty of the school committee in each school district in the month of April of each year to assess and levy in each school district in New Castle County the sum of \$75; in each school district in Kent County, \$50; and in Sussex County, \$30, "to be applied to the support of the school of their district, to be assessed, levied, and collected as provided in chapter 42 of the Revised Statutes."¹ Any school district might levy any additional sum up to \$400 after the exact amount had been fixed by a majority vote. A majority of the voters in the district might also levy a sum not to exceed \$500 for the purpose of building a schoolhouse, and all sums decided on by majority vote were to be levied and collected in the same manner as the minimum sums required by the act.²

The act of 1861 marks the downfall of one tendency in public education in Delaware and the completed evolution of its opposite. The act of 1829 required that as much money be raised in the district as was due to the district from the school fund. The act of 1830 cut this requirement in half, and the act of 1837 reduced it to \$25. This tendency of the voter to reduce the requirements on himself to the lowest limits was met by another movement which sought to provide for the schools by State action. The logical result of this tendency was the act of 1861 which to that extent eliminated the wishes of the individual voter altogether and made school support automatic.

Of the law of 1861 Supt. Groves remarks:

This act of 1861 was a long and grand step in the cause of education in the State. By its provisions no child was to be deprived of an opportunity of attending school or of securing a common-school education, throwing the responsibility entirely upon the parent for any neglect. The State fully measured up to her power and responsibility by her action in providing for the education of her subjects. That this avenue should not be closed, wherein the future citizen and voter might allege that an education was impossible, she plainly indicated by her provisions. Further, she declared that it were better to build schoolhouses, employ teachers, and maintain schools than enlarge the almshouses and prisons; that the amount of illiteracy should be smaller, and that fraud in the ballot, with covered head, should take its place behind the intelligent voter. Before this date it was indeed a critical period annually on the first Saturday in April for the youth of the State. Fathers, anxious and considerate for the welfare of their children, with nervous tread and painful forebodings, wended their way yearly to the school meeting. The State herself was in suspense and awe, awaiting the result of the actions of her subjects. The weal or woe of society hung trembling in the balance, to be decided by the day's action.³

¹ This was the Revised Code of 1852, then in use.

² Laws of Delaware, 1861, ch. 70. Several other laws were passed at this session which were educational in character (chs. 58, 100): One provided for the building of a schoolhouse (ch. 54); one for the publication of the act of 1861; and another voted \$157.32 for the liquidation of an unpaid bill for printing which still hung over the late New Castle school convention (ch. 122).

³ Groves, J. H.: *History of Free Schools of Delaware*, in 5th An. Rep. Supt. Free Schools, 1890, pp. 49-50.

It is perhaps best at this point to trace the subsequent legislative fortunes of the public schools down to 1875, when a new general school law marked another step forward and started the system on a career of real State-wide development. There was of course but little educational legislation during the war period and this little was local in character. After the return of peace the law of this period of most general significance was the act of 1867 which chartered, as a private institution, the Delaware State Normal University, whose creation will be noticed later. With this exception practically all the educational legislation between 1861 and 1875 was essentially local in character. In this predominantly local legislation, however, there can be traced certain tendencies which were now making themselves felt as never before. These included the further organization of town and city systems and the grant of authority to these to borrow money on the public credit either with or without mortgage security on property already owned by the school.¹ This tendency was not confined to the larger cities, but seems to have permeated the whole educational system. The stronger and more ambitious school districts were given more freedom of initiative in one of two ways. If so disposed they were permitted to exceed the \$400 limit set by the act of 1861 in the matter of local voluntary taxation. The first of these acts seemed to have been that of February 13, 1867 (ch. 141), which allowed School District No. 78, in New Castle County, to raise \$800; in some cases the amount thus raised by taxation was as much as \$1,500.² Such acts were euphemistically called acts for relief and they appeared from year to year.³ When taxation was not available or insufficient these smaller districts might also borrow with or without mortgage.⁴

When the action of the legislature on similar questions presented by the Wilmington schools in the fifties is recalled, the stride toward modern methods is seen to have been tremendous.

Another development of this period was that which took the more or less disjointed, fragmentary, and independent school districts that centered in and about the towns and villages, apparently including in some cases the older institutions of private origin and reorganized them as a single public-school system. This new system sometimes continued to bear the ante bellum name of academy, but more often distinctly proclaimed itself as the public-school system. The consolidated school was thus incorporated and given authority to collect sufficient taxes for the pay of teachers and for schoolhouses. In this way the town and city schools of the State began to make progress.

¹ See Wilmington under acts of 1863, 1869, 1871, and 1873.

² Ch. 396, laws of 1873.

³ See chs. 427 and 428, laws of 1869; chs. 44, 45, 47, and 51, laws of 1871; chs. 396, 400, 401, 403, 404, and 406, laws of 1873; ch. 44, laws of 1875.

⁴ See ch. 140, laws of 1867; chs. 429 and 430, laws of 1869; ch. 402, laws of 1873.

New Castle seems to have been the first of the smaller cities to inaugurate this scheme of development. In this way the Dover Academy was reorganized in 1867 (ch. 180) and Milton Academy in 1869 (ch. 484). These institutions were often both primary and secondary schools, and in some cases at least, as was the case with the Dover public schools, under the act of March 9, 1875 (ch. 42), it was still possible to provide for a deficit by a rate bill levied on parent or guardian and collected as other taxes. Following these precedents, in 1875 (chs. 52 and 53) the school districts in Delaware City and Lewes were consolidated into town systems. Neither of these laws, however, was a good one, for Delaware City within certain limits went back to the old principle of letting the voters decide what the tax should be and both provided for school rates, but the weakness of these acts is perhaps atoned for by the better law given to New Castle the same year (ch. 54). This town received a charter for 20 years for its board of education, which was put in full charge of the schools and authorized to fix, up to \$4,000, the amount to be raised for education, and there were to be no school rates.

The legislature continued the business of creating new districts,¹ and homes and farms were regularly transferred by legislative enactment from one district to another.² Thus it would appear that in this State centralization worked by contraries. A State-wide law for a general school tax was secured only after a struggle of a generation, but the organization of a new district in any county or the transfer of John Doe from district A to district B for the sake of greater personal convenience was a matter of such grave concern that it commanded the attention of the whole State.

In these ways did the public educational sentiment of Delaware begin to again find the voice which had been stilled by war, although there was as yet no central authority to whom reports might be made and whose duty it was to preserve and publish such reports. An effort to secure such was made in 1867 when a bill entitled "An act to provide for the appointment of a State school superintendent and a board of school examiners for this State" was introduced into the house on March 6. It passed the house, but failed in the senate.³

Notwithstanding this failure in legislation, the friends of education were not cast down. An educational mass meeting was called to be held in Dover on December 23, 1867, its purpose being "for a mutual interchange of opinions; to receive and discuss suggestions of improvements in the law." The meeting was in session two days,

¹ See chs. 423, 424, 425, laws of 1869; chs. 50, 52, laws of 1871; ch. 398, laws of 1873; ch. 45, laws of 1875, and later.

² See chs. 53, 181, laws of 1871; ch. 399, laws of 1873; chs. 36, 37, 38, 39, 40, 41, laws of 1875, and later.

³ H. J., 1867, pp. 433, 456, 505; S. J., 1867, p. 389.

and its "proceedings were conducted with signal unanimity, harmony, and good feeling." A preliminary meeting had been held on November 9, 1867, and the call for a State-wide meeting had been issued by Kent County. The meeting in December called itself a State educational convention; many ladies and gentlemen were present, mainly from Kent and New Castle Counties, with a few from Sussex. The speakers included T. Clarkson Taylor, of Wilmington, and J. P. Wickersham, of Pennsylvania. No report on Mr. Wickersham's address has been seen, but the *Wilmington Daily Commercial* for December 31, 1867, contains a summary of that of Mr. Taylor. The larger part of this address is a plea for more education in general and for a better system in Delaware in particular. The defects of the existing law were considered. These included the method of raising school funds over and above the taxes provided by law, for the district was still allowed to vote annually on the supplementary amounts to be raised. The results of this provision were unfortunate, because progressive districts went forward and indifferent ones did not. There was no general school head, and therefore no unity of school action; there was no standard of qualification of teachers, and the general law was entirely inadequate. He suggested that each district be required to levy enough tax to keep the schools open for at least four months (some demanded eight months) before any appropriations might be made to them from the school fund. These taxes should be levied, collected, and disbursed by school commissioners in each hundred and town district, who were to be substituted for the commissioners of each school district and were to have also general care of the schools. Mr. Taylor asked that a State superintendent be appointed; that county superintendents examine teachers and schools, hold institutes, etc., and that there should be provision by law for good school buildings, grounds, furniture, and apparatus.¹ Uniformity of textbooks was also urged by the convention, but the question of school libraries was laid on the table.

At least two results came from this meeting. It served as a sort of school institute for the teachers of Kent, who later effected a formal organization and agreed to meet again at Smyrna in April; in accord with the general sense of the convention a committee was appointed to draft a general school code, expressive of the changes desired in the existing school system. The committee reported to another meeting held July 13, 1868, changes and additions to the school law² then in force. These alterations were embodied in what was called "The new school law." This was presented to the general assembly

¹ *Wilmington (Del.) Daily Commercial*, Dec. 24, 25, 1867.

² The *Commercial* reports that the attendance on this meeting was small and that another was called to meet in December. See issue for July 15, 1868.

of 1869 and its passage urged, but in vain.¹ Similar efforts were made in 1871 and 1873, but with the same result.

As illustrating the desires and ideals of the period may be quoted the statements of Dr. J. E. Clawson in 1871, with his list of "particulars in which our public school system needs reform," and the educational bill brought forward in 1873. These two help much to explain the evolution of the law of 1875. Dr. Clawson said:

The voting for tax or no tax at the annual school election should be abandoned, and the amount of tax necessary to keep each school in the county open, *at least six months in the year*, should be levied and collected in the same manner as other county taxes. The appropriations from the State might be used to keep the school going for a longer time.

Each county should have a superintendent, whose duty should be to visit each school in the county as often as possible, and in connection with the district officers, whenever practicable, in order to excite an interest in the community on the subject of education, make suggestions to the teachers as to the best modes of teaching and governing schools, and to the commissioners as to the construction, ventilation, warming, and furnishing school buildings; to examine and furnish with certificates persons properly qualified to teach; to make an annual report to a State superintendent * * * and hold county teachers' institutes, etc.

There should be also a State superintendent, who should prepare suitable blank forms, receive reports, make a biennial report, and recommend legislation. This officer and the three county superintendents, with an additional State officer who should act *ex officio*, might form a State educational board who would recommend a uniform system of textbooks and consider educational interests in general. It was thought that adjustments to the system in use might be made without appreciable cost to the taxpayers.²

The educational bill which was proposed in 1873, but failed of enactment, may be summarized as follows.³ It was entitled "An act to amend the several acts relating to free schools in this State." It provided for the election of county and State boards of education; the governor was to appoint a county superintendent for each county and to require an annual report on the schools to the legislature. It provided for careful supervision; ordered the school commissioners to raise a certified annual tax and made them personally responsible for the amount; provided for the examination and certification of teachers by the county superintendents and authorized the establishment of colored schools by the colored taxables in any district in the same manner as the white schools were then organized.

¹ The *Wilmington Daily Commercial*, in its issue for Mar. 15, 1871, says that the Teachers' Association of Kent County late in 1868 appointed three men to draft a school bill. This bill was presented to the assembly, which "treated it with little better than silent contempt, and here the clamor for reform for awhile ceased and the Teachers' Association of Kent County died a natural death." It intimates also that politics was at the bottom of this failure, for it adds that two of the men who drafted the bill were Democrats: "They were not afraid that a reform school law would turn white men black or black men white."

² See *Normal School Advocate*, vol. 1, No. 1, pp. 5-6. See also an argument in favor of establishing normal schools in 4th An. Rep., Delaware State Normal University, 1869-70, pp. 49-53.

³ Rep. U. S. Commis. of Ed., 1873, pp. 50-52.

The administrative work of the schools was placed in the hands of the county board who heard appeals, formed new districts, provided textbooks at cost, and received reports from the county superintendent, who was their agent. His main duty was to visit the schools, and to make reports on all phases of the work. They were to be paid \$1,200 per annum. Every district was required to raise at least \$75 from taxes; funds from whites and blacks were to be kept separate; and the negroes were to receive all the taxes paid by them.

The bill as proposed in 1873 failed, but, as will be seen later, prepared the way for more successful action in 1875.

II. THE DELAWARE STATE NORMAL UNIVERSITY, 1866-1871.

The first law of general significance after the war period was the act of January 23, 1867, which provided a charter for the Delaware State Normal University.¹ This was organized as a private institution on November 19, 1866, because of the necessity for an institution "wherein students might receive a professional education, which should peculiarly qualify them for instructing and disciplining youth." It was commenced without aid from the State and remained a private institution to the end. Strictly its history does not belong in these pages, but it sought to render public service and is admitted for the sake of the service rendered and because of the influence exerted by it in drawing public attention to the needs of the public schools.

It began its work without State patronage and without endowment save the value of some 20 scholarships which had been subscribed for in advance. It received with its charter authority to hold property up to \$100,000, together with the usual powers of a corporation. The trustees included John C. Harkness, who became its president, Dr. Caleb Harlan, its vice president, Dr. John A. Brown, James Bradford, Allen Gawthorp, Judge Willard Hall, who in other days had so strenuously opposed the normal school idea, Howard M. Jenkins, and others, 28 in all.

Besides the normal-school course the institution provided for a business education and had a department in which teachers were prepared for teaching the classics, modern languages, and the higher mathematics in the academies and high schools. Passing over the other departments, it appears that for admission to the normal course the candidate must be 14 years of age, of good health and good moral character, and able to pass an examination in reading, spelling, penmanship, arithmetic, grammar, and geography. The course covered three years and besides the usual high-school branches

¹ Laws of Delaware, 1867, ch. 279. The act itself is not printed in the session laws for that year, but may be found in the third annual report and catalogue of the Delaware State Normal University, 1869, p. 9.

required school government, principles of education, theory and practice of teaching, school economy, mercantile calculations, commercial rules, bookkeeping, business correspondence, and extemporaneous speaking. There was also work in instrumental and vocal music. On completion of the normal course the degree of bachelor of school teaching might be conferred, and this degree might be followed by that of master after three years of successful practice.

During the first year there was a faculty of 6 men, 1 woman, and 1 vacancy; 76 pupils were registered, of whom 26 were women; 19 persons attended the evening sessions. In 1869 there were 2 graduates, 4 in 1870, and 4 in 1871. At one time the attendance was as high as 188; in 1870-71 there were 86 students, of whom 27 were women.

In May, 1870, the board of trustees issued a circular—

setting forth the inefficient and disastrous condition of public education in the State of Delaware, and recommending, as immediate remedies, the establishment of a State normal school, the office of State superintendent, and a teachers' institute in each county for two weeks annually.

They proposed to evolve into a State Normal and Polytechnic University, and for this purpose were then undertaking to raise from \$50,000 to \$100,000; but while this work was going on harmoniously and hopefully and after more than \$40,000 had been raised for this purpose, their work was brought to a sudden close by a repeal of their charter on March 29, 1871 (ch. 153), "without any mentioned reason or cause."¹

The causes of this repeal it is of no advantage to present. It is sufficient to say that they go back to the circular issued in May, 1870, by the State Normal University. Certain statements contained in this circular were reprinted in the Annual Report of the United States Commissioner of Education for 1870, came under the eye of one of the United States Senators from Delaware, and were regarded by him as a misrepresentation of the real facts. The matter was aired in the Senate, with the result that the offending statements in the Report of the Commissioner of Education were cut out and the charter of the Delaware State Normal University was repealed by the legislature.²

Those who would investigate the matter for themselves will find the sources in detail in the Congressional Globe and in the various issues of the Wilmington Daily Commercial.³

¹ See catalogues and reports, first to fifth (1866-1871), in Bureau of Education, and Powell's Hist. of Ed. in Delaware, p. 164. See also Barnard's Jour. of Ed., XVII, 807.

² "An act to repeal ch. 279, vol. 13, of Delaware laws."—H. J., 1871, p. 508. Mar. 28 the bill "was read" and "Rule 12 was, by unanimous consent, suspended and the bill just read was read a second time by its title" (pp. 533-4).

³ See the discussion in the Congressional Globe, 41 C., 3 S., pp. 1078, 1100, 1131, 1132-35, 1418, Feb. 9-20, 1871, and in the Wilmington Daily Commercial for March and April, 1871, especially Mar. 3, 15, 27, 30, 31, and Apr. 4, 7, 10. See also the first edition of the Report of the Commissioner of Education for 1870, pp. 108 and 109, and compare that edition with the second issue.

It is evident, however, that the discussion in the United States Senate and in the Delaware newspapers served a purpose in awakening the citizens of the State to a clearer realization of the situation. Thus, "Mutual Friend," who writes from Milford, Kent County, to the *Wilmington Daily Commercial* for April 7, 1871, says that the school system was "not what it should be," for "education to be general must be free; and to be free it must be fostered by the State." This end, he claimed, was not accomplished by the laws of Delaware. There were, he thought, probably 20 school districts in Kent and Sussex Counties that had not had a free school in the last year; that under the system in use it was possible to have men on school boards who could not read or write, and "this, to our personal knowledge, has frequently happened."

The discussion was often bitter and perhaps sometimes unjust. There are intimations also that there was not only class consciousness, but class hostility, as when a correspondent of the *Wilmington Daily Commercial* (Apr. 7, 1871) charged that in Milton and Milford the upper and wealthier class—the "broadcloth" class—who were able to educate their own children in private institutions, were for that reason opposed to taxation for the public schools. The religious question also came up at times, as was the case in 1867, when the Roman Catholic authorities of Wilmington asked the assembly to allow certain church schools to be taken under State control.¹ During this same year (1867) "An act to prevent the improper distribution of the school fund of this State" was introduced in the house, where it passed, but failed in the Senate.² The reason for the introduction of this bill has not been discovered.

That the closing of the Delaware State Normal University was felt throughout the State is indicated by the effort to supply its place. In 1873 the assembly was called on to dispose of the land-scrip fund, which was then beginning to accumulate. By an act passed on March 27 of that year it directed that \$3,000 per annum for two years should be paid out of that fund to Delaware College, and in consideration of the receipt of this fund the college was required to—

provide free instruction of a suitable character for 10 students from each county of this State whenever such students on presenting themselves for admission shall obligate themselves to teach in the free schools of the State for not less than one year.³

In 1875 an effort was made to reenact and continue the act of 1873, and a bill was introduced for this purpose. The bill passed the senate, but was defeated in the house May 25, 1875.⁴

¹ See H. J., 1867, pp. 596-99. On one occasion at least this religious question had come up before. In 1847 the assembly chartered St. Mary's College, at Wilmington. There was immediately presented to the legislature a petition to repeal the charter. The petition was refused. The report refusing the petition may be read in H. J., 1847, pp. 287-289.

² H. J., 1867, pp. 443, 464, 500, 612.

³ Delaware laws, 1873, ch. 408.

⁴ See H. J., 1875, pp. 373, 745.

III. PROGRESS DURING THE PERIOD.

Taken as a whole it may be truthfully said that there was little legislation of general educational significance between 1861 and 1875. There are even indications that it was felt to be necessary to approach this question with more or less caution. For some years the subject of education had given place in the governor's message to weightier problems, and when in 1871 Gov. Gove Salisbury returned to the subject he felt it proper to apologize to the assembly for his remarks on education because "changes in long-established and well-understood laws * * * should not be made incautiously or without mature consideration." He then suggested that changes were needed and—

that some superintendence should be had by the State, through a legally authorized agent, over this whole subject; * * * the duties of those intrusted with this power should be clearly defined by law and their performance strictly enjoined.¹

If these cautious suggestions of the governor are to be taken as the measure of official enthusiasm, it will be seen that private individuals had more highly developed ideals and were more boldly aggressive in advocating their views. Witness the list of "particulars in which our public school system needs reform," published by Dr. J. E. Clawson in June, 1871, and already quoted.

But after all, the most important question in connection with this period is not theory but actual accomplishment under and as a result of the act of 1861. This is a question much easier in the asking than in the answering, and in reply but two sources may be used, the census of 1870 and the auditor's reports of 1861-1875, which give substantially the same class of figures with more detail. In the absence of any annual State school reports, such statistical matter as is available is welcomed gladly.

For the year ending June 1, 1870, the census reports that out of a total population of 125,015 and a school population of 40,807 (5 to 18 years of age) there attended school 19,965, of whom 18,770 were white and 1,195 were colored. There were 19,356 persons over 10 years of age who could not read and 23,100 who could not write, 11,280 of these being white and 11,820 colored.

At that time the schools of all classes, from primary to college, public and private, numbered 375. They had 510 teachers, of whom 147 were men and 363 were women, with 19,575 pupils. The total income of these institutions was \$212,712; of this sum \$120,429 was from taxation and public funds and \$92,283 from other sources, including tuition.

The public schools numbered 326 of all classes and were divided as follows: One normal school (the Delaware State Normal Univer-

¹ H. J., 1871, p. 19.

sity), with 1 man and 6 women teachers, 100 pupils, and \$4,000 income; 12 graded common schools, with 61 women teachers, 2,935 pupils, and \$44,755 income, of which \$41,455 came from public sources. There were 313 ungraded public schools, with 106 men and 214 women teachers, 13,800 pupils, and a total income of \$78,974 from public sources.

There were reported also of private schools, "classical, professional, and technical." Eleven colleges and academies, with 32 men and 31 women teachers, 859 pupils, and \$53,550 of income; 38 other "not public" institutions are also reported (including day and boarding, parochial, and charity schools), with 59 teachers, 1,881 pupils, and an income of \$31,433 from private sources.

The detailed statistics of the public schools in the three counties, both financial and personal, as recorded in the annual reports of the State auditor are given later in tabular form.¹

It would appear that the official heads of the State were not during these years entirely indifferent to or forgetful of their duty to the schools.

¹ See Table 3, at end.

Chapter V.

THE STATE SYSTEM: ADMINISTRATIONS OF GROVES AND WILLIAMS, 1875-1887.

At the opening of the assembly in January, 1875, Gov. James Ponder, in reviewing the results of the earlier public-school efforts, declared that in the 40 years of its existence the school system had been of "incalculable advantage" in furnishing the means of primary education to the youth of the State. He thought, however, that these advantages had been gradually impaired by the multiplication of school districts:

More than double the number of school districts originally established now exist in the State and in some localities it is difficult to maintain good schools for any great period of the year owing to the small number of pupils¹ living in the district.²

It would seem, however, that Gov. Ponder did not grasp the full significance of the school situation. The bill which came up for consideration at this session of the assembly indicated first of all that the idea of centralization in public school administration was making strides in the State, and that the people had come to realize as never before the failure of the earlier decentralized, individualistic system.

The act of 1875 did not repeal the original act of 1829, but appeared as an amendment to it, gave it a modern interpretation, and when compared with the amendment suggested as desirable in June, 1871, by Dr. J. E. Clawson³ and with the bill proposed in 1873,⁴ a remarkable similarity is observed. As the changes advocated by Dr. Clawson had the approval of the faculty of the Delaware State Normal University and the bill of 1873 that of the teaching organizations, it may be safely assumed that the law of 1875 gave satisfaction to most if not all of the more progressive educators of the State. It would even appear that the act of 1875 was more nearly like the suggestions of 1871 than it was like the bill of 1873.

¹ The law provided that when a district was organized there should not be less than 35 pupils in the new nor less than that number left in the old district.

² H. J., 1875, p. 19. It appears from the reports of the State superintendents for this period that the average school district often contained more pupils than could be accommodated in the schoolhouse or taught by the teacher. See for instance the third annual report, 1877-1878, p. 44, where it is shown that the average number of children "between 5 and 21 years, to each school" in 1877 was 140 in Newcastle, 61 in Kent, and 48 in Sussex.

³ See ante, page 78.

A synopsis of the law, ordinarily known as the "New School Law of 1875," follows:

I. THE FREE SCHOOL LAW OF 1875 AND ITS ACCOMPLISHMENTS.

State superintendent.—A State superintendent was, by this law, to be appointed annually by the governor, "to hold his office one year or until his successor shall in like manner be appointed." His salary was \$1,800 per year and his duties were to visit every school in the State once a year, noting in a book the modes of discipline, government, and plans of instruction in use; to advise with teachers as to the best methods for the advancement of their pupils; to examine all that may desire to teach; to hold a teachers' institute in each of the counties at least once a year, of at least three days' session, for imparting information and having a general interchange of views of teachers as to the wants of the various schools; to report in writing to the governor on the first Tuesday in December in each and every year the condition of the schools, and make such recommendations and suggestions as he may think proper in regard to a thorough completion of the system.

State board of education.—The president of Delaware College, the secretary of state, State auditor, and State superintendent were organized into a State board of education.¹ The president of Delaware College, by virtue of his office, was president of the board and the auditor was secretary of the same. The latter officer received a salary of \$100 per annum. The other members received no pay. The duties of the board were to determine what textbooks should be used in the schools; to issue blanks and forms for distribution to the local commissioners, and to demand returns to be made in pursuance thereof; to hear all appeals and determine finally all matters of controversy between commissioners and teachers.

Teachers.—All teachers were required to have a certificate from the State superintendent, countersigned by the county treasurer in the county issued upon the payment of \$2, said certificate setting forth his or her proficiency in the common English branches; to make out and hand to the commissioners of the district a report setting forth the whole number of pupils attending school during the quarter, the textbooks used and branches taught.

Revenue.—The manner of raising revenue was the same as in the old law, except that in Sussex County each school district was required to raise by taxation not less than \$60 annually, instead of \$30, as formerly, and in New Castle and Kent counties \$100, instead of \$75 and \$50 as formerly.

In 1879 an amendment was made to the act of 1875 requiring the superintendent to issue, as occasion demanded, three grades of

¹ Changed by ch. 369, laws of 1881, so that it consisted of the secretary of State, the president of Delaware College, and the State superintendent. The assistant superintendent became secretary of the board.

certificates, known as the first grade, good for three years; the second, for two years; and the third, for one year. He was also granted the privilege of issuing temporary permits to teachers to teach for 30 days, when in his judgment the interests of education required it.

The act of 1875, of which the above is a synopsis, did not abrogate the free school law of 1829, but merely supplemented it.

The first "superintendent of free schools of the State of Delaware" was James H. Groves. He was appointed April 13, 1875, and served until April 13, 1883, when he was succeeded by Thomas N. Williams, who served until April 13, 1887, when under the act of April 7, 1887, the superintendency was abolished. In 1881 the office of assistant State superintendent was created.¹ This officer was directed by law "to aid the State superintendent in the performance of his duties" and for this end was subject to his direction. The position was filled by the appointment of Henry C. Carpenter, who served from April 13, 1881, till April 13, 1887, when this office was also abolished.

In his estimate of Groves, Powell² says that he "proved to be a well-equipped, enthusiastic officer, and a very important factor in the success of the new law. He thought the true function of public education is to prepare the average man for the duties of citizenship." Judge Conrad calls him "an efficient organizer." He "filled his position with great credit. His organization of the teachers' institutes, and the remarkable tact displayed by him in the management of them, resulted in their success from the beginning."³

The remainder of this section will be devoted to a brief presentation of what was accomplished during the administration of Mr. Groves and of his successor as State superintendents, so far as those results are recorded in the scattered sources of the period.⁴

These annual reports, while brief, are more uniform in their treatment of subjects than is often the case. Their statistics are very incomplete, however, and leave various important subjects, like attendance, out of consideration; usually only the figures for every other year are presented, and as far as statistics go, it is evident that the State officers were still thinking in terms of the separate counties rather than in those of the State.

During the 12 years between 1875 and 1887, while the educational fortunes of the State were under the direction of a State superintendent, the same subjects came up again and again for discussion. The questions of most importance were: The examinations of teachers and teachers' certificates, supervision or the annual and

¹ Laws of Delaware, 1881, ch. 369.

² Powell, L. P.: Hist. of Ed. in Delaware, p. 154.

³ Conrad, H. C.: History of Delaware, III, 802.

⁴ Six annual reports for this period were published: 1875-76, 1877-78, 1879-80, 1881-82, 1883-84, 1885-86, and biennial reports for 1887-88, 1889-90, 1891-92. For this period the auditor's reports were published separately from the assembly journals. In the school law, teachers were instructed under penalty of loss of salary to make monthly reports, but no such penalty was provided against district clerks if they should fail to pass these reports on to those higher up.

semiannual visits to the schools by the State superintendent or his assistant; teachers' institutes in the various counties and what was naturally suggested in that connection—the importance and need of a normal school; and the question of uniform textbooks. Other subjects that commanded the attention of the superintendents and got large representation in their reports were the condition of public schools in the cities and towns and statistics of the same; the public and semipublic educational work carried on at this period among the negro population and specimens of the examinations given applicants for teachers' certificates. The statistics for this period are to be found at the end of this volume.

The first annual report issued by the State covers the year ending April 1, 1876. Perhaps the most important subject of the time was the qualification of teachers. Before 1875 the only requirement for teaching was the good will of the community. The plan of annual examinations of teachers now proposed and enforced was found to be of service in raising the standard of qualification. Examinations, given partly oral and partly written, included orthography, reading, writing, mental and written arithmetic, geography, English grammar, history of the United States, and the theory and practice of teaching.

The most important duty of the superintendent at this period, perhaps, was that of visiting schools. The law required that all schools in the State should be visited annually by the superintendent. The purpose of the visit was twofold: First, to examine the plan of the teacher in his school classification, the number of daily recitations, the time devoted to each, the number of classes in each branch, and method of instruction used and made of government; and second, to encourage the teacher in doing what was right and proper, to show him how to remedy existing evils, to properly drill and to enkindle a manly enthusiasm in the pupils themselves.

Of the results Supt. Groves says in his first report:

In most cases the teachers were using the methods used in the schools where they were taught. If they had been taught according to the old method reading, writing, and ciphering, that was their program. It was reading without any regard to inflection, articulation, emphasis, or even a proper regard to the sounds of the oral elements; writing, without even so much as a specific supervision of the exercise; arithmetic, merely the "ciphering" part. In grammar there was the mere recitation of the text; in geography 8 or 10 questions, and "take your seats." There was too much of *learning lessons* and not enough of *teaching*. * * * In many schools neither grammar nor geography was taught. Reading, writing, and ciphering formed the sum and substance of the daily work.

By an act of 1881 an assistant State superintendent was appointed,¹ whose duties were alike in kind and character to those of the superintendent. He also was appointed by the governor for one year, was given a salary of \$800, and was required to aid the superintendent

¹ Ch. 366, law of 1881.

in his work. By this action the superintendent was partly relieved from the necessity of traveling from school to school and so released for the distinctively administrative duties of his office.

The law of 1875 required that the State superintendent should hold an institute in each county for at least three days, "for the purpose of instructing and assisting teachers in the best mode of teaching and governing schools and having a general interchange of views upon those subjects." The teachers were required to attend and occasionally to lose the time, although as a rule they were allowed to close their schools for the days the institutes were in session.¹ The State superintendent was the responsible officer in charge of the institutes and did most of the teaching, although aided now and then by lecturers from neighboring States, who did their work without charge, and also by local talent, including lawyers, doctors, ministers, and educators, who "lent their presence and assistance in the good cause."

During the earlier years the institutes were financed entirely from the fund collected from teachers in payment for teaching certificates. On the earnest recommendation of the State superintendent the assembly contributed in 1885 (ch. 445) the sum of \$300 annually for the use of the institutes, \$100 going to each county. In 1887 a similar sum of \$300 was given for a State teachers' institute. The very existence of these institutes suggested constantly and persistently the need of a normal school for the State. As something of a substitute for a normal school there was organized in 1888 a summer school for teachers at Smyrna. It was under the direction of Levin Irving Handy, county superintendent of Kent. In 1888, 59 students were enrolled; in 1889 the number was 60.

The free school law provided that the State board of education and the State superintendent should determine what textbooks were to be used in the schools, but they were given at first no power to enforce their decision.² The result was that many varieties of textbooks still appeared; one particular school with 33 pupils could boast of 26 classes. The difficulty was corrected by the law of 1881 (ch. 369), which directed that the State superintendent should purchase all the books to be used in the schools, pay for them out of State funds, and distribute them to the clerks of the school districts at cost price. These were to sell the books at fixed prices to the pupils and cover the receipts back into the hands of the State superintendent. This law put an additional burden on the clerks without increasing their pay and also subjected them to the risk of loss, for under the law they were responsible to the superintendent for the books ordered. In 1885 a five-year adoption period was provided.³

¹ In 1881 this was made the law. See ch. 369, sec. 9.

² An amendment in 1879 (ch. 45) required the school commissioners to certify under penalty that they had "adopted and used" the books directed to be used by the State board.

³ Laws of Delaware, 1885, ch. 446.

Notwithstanding evident weaknesses the superintendent could say in his first annual report that "there is a marked change for the better" and that "a genuine interest in public education is gradually but persistently overcoming any lingering prejudice to the new order of things. The position of public-school teaching is being ennobled and elevated." He still felt it necessary, however, to plead for more support, for in 1883 there—

seemed but one thing lacking, namely, the hearty cooperation of parents and school commissioners. * * * It is highly important that the school commissioners in each district should be workingmen, ready to labor in season and out of season to promote the interests of the schools, whether paid or not paid for their services. Hard labor is the *sine qua non* of a good school.¹

In 1877 Gov. Cochran put himself to the trouble of reviewing with some detail the historical development of the idea of free schools in this State from 1792 to the date of writing. He also reviewed the law of 1875, and in this message and in that of two years later rejoiced in the encouraging prospects of the schools.

In the report for 1878 (third annual) the superintendent declared that there had been "a very perceptible improvement in the qualifications of the teachers" and attributed this improvement in the main to the annual examination of teachers.

From my personal knowledge, and from careful calculation, I am satisfied that of the 462 teachers who were examined and received certificates not more than one-fifth of the same could have passed then [1875] the examinations required this year. The gradual elevation of the standard of qualifications year by year has been the means of inducing a more systematic and accurate study of the branches used in our schools and of fitting men and women for the responsible duty of training our youth.

In 1879 the act of 1875 was so amended² that it required the applicant for the teacher's certificate to answer 60 per cent of the questions set on orthography, reading, writing, mental and written arithmetic, geography, history of the United States, and English grammar for a third-grade certificate, good for one year; answering 90 per cent secured a second-grade certificate, good for two years; and for a first grade there were added to the above, natural philosophy, elements of rhetoric, geometry, and algebra. Such certificate was good for three years.

Improvement in the teachers meant naturally an improvement in the schools, and in this report the superintendent was able to suggest the question of graded schools for the more advanced:

It has been a matter of consideration whether New Castle County is not ready for a course of study, year by year, for pupils between the ages of 6 and 16 years.

In this report also the superintendent urged the necessity of a codification of the school laws³ and that the whole matter of levy-

¹ Seventh An. Rep., 1881-82, p. 9.

² Laws of Delaware, 1879, chs. 45, 46.

³ Codification ordered by ch. 369, sec. 10, laws of 1881.

ing and collecting the school tax should be left in the hands of the levy court commissioners. It will be remembered that the method of levying and collecting this tax had not been changed by the act of 1875. The irreducible minimum required by the State had been increased, however, from \$75 to \$100 for each school district in New Castle and Kent and from \$30 to \$60 in Sussex.¹ It was in practically all cases necessary to raise an additional sum by a popular tax levy, and this was now as it had been in the past a source of much bickering and confusion.² The State teachers' association, which had been organized in 1879, at its annual meeting in August, 1880, went on record in the matter of this levy. They condemned the method in use and petitioned the assembly that school taxation be placed "on the same basis as other tax laws of the State."³

In many cases school furniture was still in a primitive and therefore chaotic condition, for it had been "made without particular reference to school uses." Difficulty was also experienced in persuading school committees to improve their old buildings or undertake the construction of new ones.

In 1881-82 the superintendent reports the situation as particularly bad. Several new and quite creditable school buildings had been erected.

Yet what has been done in this direction is only a very small fractional part of what ought to have been done. What we need, perhaps, more than anything else, is a strong public sentiment in favor of better school accommodations. A majority of our school buildings are unfit for the purposes for which they are used. They are flimsily constructed, wretchedly arranged, built on small lots and in low places, and contribute in no respect to the comfort of the children. Nearly all of them seem to have been built without a thought of ventilation.

But soon after this date conditions began to improve, for in 1883-84 the superintendent reported that \$129,000 was spent in "the erection of better and more commodious schoolhouses. Yet this is but a small part of the work to be done in this direction." In 1885 and 1886 more than \$125,000 was spent for the same purpose.

In 1883 there was made to the free schools the first direct appropriation from the State treasury in addition to the State school fund. This amounted to \$25,000, of which, \$10,000 went to New Castle County, because of its larger population, while Kent and Sussex each received \$7,500. In the last two again the sum received was divided equally among the districts,⁴ but in New Castle it was divided in proportion to the school population in the district,⁵ while an

¹ In 1881 the requirement was raised to \$150 in New Castle and \$125 in Kent. There was no change in Sussex (see ch. 369). In 1883 (ch. 47) and 1885 (ch. 440) the requirement for Sussex was raised from \$60 to \$75.

² For example, see *Seventh An. Rep.* for 1881-82, p. 18.

³ Report for 1880, p. 14.

⁴ Modified somewhat as to Kent County by *Laws of Delaware*, 1885, ch. 442.

⁵ *Laws of Delaware*, 1883, ch. 47.

amendment of 1885¹ provided that no district in Sussex County should receive any of this fund until it had raised at least \$75 by taxation.

In April, 1883, Supt. Groves was succeeded in office by Thomas N. Williams. This gave the new superintendent an opportunity to review the eight years' work of his predecessor:

When I entered upon the duties of my office in April, 1883, owing to the efficient management of my predecessor, and his worthy assistant, I found that the school had been established upon a healthy basis and a most careful supervision has been exercised.

The experience of the past year has shown a most satisfactory development and growth and has been rewarded by a gratifying measure of success. I can safely say that there is a growing interest in the cause of public instruction in our State, which, though not so generally active perhaps as we could desire, is nevertheless so much more so than formerly that I am convinced our schools are not retrograding but steadily and surely advancing. The increase of interest in our free schools is evidenced by the number of beautiful and commodious houses that have been erected during the past year in the three counties of the State; the old, comfortless, homemade desks that have given place to new and improved school furniture; the willingness with which the people have, in many of the towns and rural districts, used their influence to obtain sufficient means for procuring good school apparatus and good teachers; and the general manifestation on the part of the public of a desire to elevate the standard of free education.

* * * The seeming importance of our free schools has gradually assumed the force of a profound conviction. * * * Considered as the growth of 10 years, the Delaware system of "free schools" is a most gratifying work: Never before has public sentiment been so strong in favor of the support of free public schools as to-day. The press of the State is a unit in their favor. The leading men of all parties and all religious denominations acknowledge and defend the duty of securing a good common-school education to the children of all classes.

This judgment pronounced by Mr. Williams on the work of his predecessor appears to be a fair and not unreasonable estimate of the development of the first years under a State system, and the development thus inaugurated by Groves was continued by Williams and then by the State board.

The Delaware State Teachers' Association dates from December 30, 1875, when it was temporarily organized in Wilmington. Efforts had been made to develop such an organization in 1847 and again in 1854, but with indifferent success. It received permanent organization at Rehoboth on August 28, 1879, and since then has been of particular value in encouraging the holding of local educational gatherings. About 25 such were organized in 1883-84, mainly in Kent and Sussex. They were held in churches, schoolhouses, and town halls, and were well attended, and "in several cases in our little crossroads educational meetings was laid the foundation of what is now a beautiful and attractive school building."

The evidences of progress were again summarized for 1886. Commodious houses, good apparatus and good teachers, and a desire to

¹ Laws of Delaware, 1885, ch. 441.

elevate the standard were now everywhere visible, but "the want of a more active interest" was still holding many districts from advance. Another drawback was the frequent change of teachers, and while many teachers were improving, "one of the great needs of the State" was a normal training school. This led to a somewhat detailed discussion by the superintendent on the organization of such an institution, but its day was not yet.

The report for 1886 was the last issued by the State superintendent. The next (that for the two years ending Dec. 31, 1888) was issued under the auspices of the State board of education, which, under the act of 1887, became the administrative head of the State system.

When consideration is directed away from what was actually accomplished under the act of 1875 and is centered on the general tendency of school administration during the period, it is possible to trace development in two particular directions. These were: (1) The unusual development during these years of incorporated town and city schools; and (2) the beginning of the State education of negro children. These phases of educational growth will now be considered.

II. THE DEVELOPMENT OF INCORPORATED TOWN AND CITY SCHOOLS.

It will be recalled that the development of the town and city schools began practically with the enactment of the free-school law of 1829, but that for the next 20 years there was little progress. About 1852, as told in an earlier chapter, individual development became possible by the enactment of more progressive laws. The consolidation of contiguous districts lying within or near the corporate town limits began; in many cases, especially under the later acts of incorporation, the new consolidated district was allowed to retain the total of the shares of the school fund to which each separate district had been entitled under the older acts.¹ Their development was further greatly advanced by giving them authority to levy taxes over and beyond the \$300 limit that had been fixed by the law of 1861 or to borrow money and secure it by mortgage on school property or by the faith of the town. In this way Wilmington and New Castle had made much progress in city school evolution, and others, after the close of the Civil War, found it of advantage to follow their example.

This consolidation of outlying neighboring districts, absorption of older private systems, and general reorganization under special charters, but sometimes without special favors, continued in the towns under the new school law of 1875, which did not exempt them from the general State law. A change began, however, when an act of 1879² exempted from the control of the State superintendent and

¹ 1881, chs. 305, 306; 1883, chs. 52, 56, 63, 65; 1885, ch. 457.

² Laws of 1879, ch. 46.

State board of education the incorporated schools of towns and cities: "This act shall not apply to any school or school district managed or controlled by an incorporated board of education, unless by special request of said board."

This provision first appears in the act of 1879 and is probably responsible for the unusual development of incorporated schools which took place in the next few years. It is evident that there was a considerable rush to attain this condition of semi-independence, for in 1883-84 the State superintendent, in protesting against the tendency of the day, said that the teachers of these incorporated schools were not required to attend State examinations or county institutes, and he argued that since they availed themselves of State funds they should not be exempt from State supervision.¹

There seems to have been no other legislation during the period that concerned incorporated schools in particular; but this large degree of local autonomy helped beyond question in their development, although it has made more difficult the task of the historian by making reports more complex and less uniform.

There follows below a table giving such statistics of incorporated schools as are available. As is often the case, these are incomplete and imperfect. As there was no distribution of money on a population basis, that item is generally omitted. The earlier reports show a gradual development in the city and town schools; they continue to expand through 1889-90. In the report for 1892 they are omitted altogether.

Statistics of incorporated (i.e. city and town) schools in Delaware, 1875-1890.

Year ending—	Town.	Length of term in days.	Schoolhouses.	Teachers.	School population.	Enrollment.	Average attendance.	Income.	Expenditures.	Value of school property.	Average cost per pupil.	Average salary per month.
Apr. 1, 1876	Dover.....	204	...	6	...	402	217	...	\$2,753	\$10,000	\$6.84	\$58.30
	Delaware City.....	200	...	3	...	300	136	\$1,284	1,384	900	4.61	36.66
Apr. 1, 1878	Dover.....	206	...	...	1,922	401	236	3,000	2,600	...	7.50	...
	Lewes.....	180	1	...	400	283	185	...	1,850	9,000	6.52	...
	New Castle.....	223	...	7	782	507	289	...	8,941	...	7.77	...
	Delaware City.....	206	...	...	...	222	104	1,291	1,291	800	5.81	...
Dec. 1, 1880	Dover.....	203	...	...	...	381	230	3,614	3,110	...	8.16	...
	Lewes.....	186	...	6	400	324	212	...	2,250	10,000	6.91	...
	New Castle.....	...	...	...	...	...	273	...	...	...	...	...
	Delaware City.....	200	...	3	...	210	140	1,800	1,360	950	...	40.00
	Dover.....	196	...	8	...	355	210	...	2,999	18,000	8.84	40.00
Dec. 1, 1882	Lewes.....	186	...	...	...	280	220	...	...	...	...	38.75
	Milford.....	200	...	4	...	187	115	...	1,600	3,000	8.55	...
	New Castle.....	205	3	9	...	539	323	4,172	4,145	...	...	40.00
	Seaford.....	188	1	4	...	250	180	1,498	1,498	4,500	...	35.90
	Delaware City.....	...	...	...	...	...	...	...	...	...	...	...
	Dover.....	197	...	...	...	458	280	...	3,731	24,700	8.14	...
Dec. 1, 1884	Lewes.....	...	...	6	...	300	240	2,208	...	10,000	...	...
	Milford.....	...	...	3	...	186	103	3,150	1,450	2,500	7.80	...
	New Castle.....	203	3	9	...	540	358	4,858	4,981	12,000	9.22	...
	Seaford.....	180	...	4	350	225	179	1,577	1,550	6,000	6.88	...

¹ Rep. for 1883-84, p. 21.

Statistics of incorporated (i. e., city and town) schools in Delaware, 1875-1890—Con.

Year ending—	Town.	Length of term in days.	Schoolhouses.	Teachers.	School popula- tion.	Enrollment.	Average attend- ance.	Income.	Expenditure.	Value of school property.	Average cost per pupil.	Average salary per month.
Dec. 31, 1886	Delaware City....	200	3	.....	225	135	.....	.....	\$2,914	\$8,000	\$9.00	.....
	Dover.....	196	.....	.....	512	245	.....	.....	5,868	25,000	8.14	.....
	Lewes.....	180	.....	7	305	245	.....	\$3,025	3,025	10,000	.....	.....
	Millford.....	.....	.....	4	123	.....	.....	.....	.....	2,000	.....	.....
	New Castle.....	203	3	9	540	358	.....	5,968	5,968	15,000	.....	.....
	Newark.....	.....	.....	.....	186	135	.....	1,450	1,450	10,000	.....	.....
Dec. 31, 1888	Seaford.....	.....	.....	.....	249	.....	.....	.....	1,422	.....	.....	.....
	Delaware City....	204	.....	4	235	157	.....	2,927	1,610	800	.....	.....
	Dover.....	204	3	8	493	251	.....	.....	4,079	21,300	8.36	.....
	Laurel.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
	Lewes.....	180	.....	.....	343	.....	.....	2,777	2,387	9,000	.....	.....
	Millford.....	180	1	4	182	146	.....	.....	975	7,000	.....	.....
Dec. 31, 1890	New Castle.....	206	3	9	550	.....	.....	.....	5,496	15,000	.....	.....
	Newark.....	200	1	4	215	166	.....	2,543	1,475	8,500	.....	.....
	Seaford.....	180	1	4	279	185	.....	1,769	1,744	7,000	.....	\$39.00
	Delaware City....	201	.....	4	223	139	.....	2,867	1,634	8,000	.....	35.75
	Dover.....	197	2	9	600	447	.....	.....	5,687	21,300	8.36	.....
	Laurel.....	170	1	5	300	268	.....	3,257	1,710	6,600	.....	38.00
	Lewes.....	.....	1	7	450	337	.....	.....	.....	9,100	.....	.....
	Millford.....	202	1	4	260	208	.....	.....	1,565	7,000	.....	.....
	New Castle.....	200	.....	9	617	472	.....	5,307	4,842	15,000	.....	35.85
	Newark.....	200	1	4	233	162	.....	2,556	1,550	10,500	.....	35.75
	Seaford.....	184	1	5	400	340	.....	2,788	3,092	8,000	.....	.....

When attention is turned from the smaller Delaware cities to Wilmington, it will be found that the favor which had been granted to them by the law of 1879, and which had made them semi-independent, had belonged to the larger city in an even larger degree practically from the beginning, for in writing the history of any phase of public education in Delaware it is soon apparent that the city of Wilmington has been educationally a law unto itself, independent of and irresponsible to the remainder of the State or to its school officers.¹ This stage of independence was attained at an early period in the race for educational development, and has been assiduously maintained, although it does not appear that any effort has been made to reduce the city schools from independence to dependence on State authority.

The early history of the development and growth of public schools in Wilmington has been given already in an earlier chapter.² There is little in the story that is spectacular. It is the story of a steady educational growth and development, with no mountain peaks and few hills that rise above the general level. It may be more accurately likened to a plain ascending with a gentle but more or less uniform slope toward the highlands of educational efficiency.

The educational development of the city in 1859 may be seen from the report of Judge Willard Hall in April, 1859. He says:

In schoolhouse No. 1 are two schools; one for boys and one for girls. In the boys' school are taught reading, writing, orthography, mental and written arithmetic, gram-

¹ See Rev. Code, 1915, sec. 2306; based on ch. 67, sec. 31, laws of 1898.

² See ch. 3, part 4, p. 69.

mar, composition, geography, history, astronomy, algebra, geometry, and philosophy; and in the girls' school the same branches with the exception of geometry and composition and the addition of drawing.

In schoolhouse No. 4 the branches in the boys' department are reading, writing, spelling and defining, mental and written arithmetic, and geography, and in the girls' department the same branches with the addition of grammar, composition, physical geography, history, physiology, philosophy, algebra, and drawing.

It was about this time also that the schools faced what was perhaps the greatest crisis in all their history. The story is told in the report of the board for 1861.

The city council, on the application of the school board, investigated the schools and found that their needs were outrunning their income. They asked the general assembly for authority to make a loan. This was given by the assembly, conditioned on its approval by popular vote, but on taking the vote it was found that the very persons for the benefit of whose children the measure was proposed had voted it down. The city council then applied to the next assembly to make a loan and was refused.¹

The Civil War was then on and attention was for a time distracted from the schools. Before the struggle was over, however, the act of February 11, 1863 (ch. 261), permitted the city to borrow \$12,000 to build a schoolhouse without requiring the school authorities to first submit the matter to a vote. In 1869 (ch. 422) they were permitted to borrow \$25,000 for increased accommodations. In 1871 the charter of the Wilmington city school board was extended for 20 years and was given the fullest powers in the administration and control of the city schools (ch. 43) and to borrow \$30,000 for new buildings and furnishings (ch. 46). In 1873, also, \$30,000 was borrowed (ch. 407).

Since that time the city has borrowed what it felt to be necessary to advance the interests of the schools. The city also anticipated the State in the assistance rendered toward the education of the newly enfranchised slaves and took up the subject with an honest interest. In 1866 was inaugurated the movement which resulted the next year in the organization of the Delaware Association for the Moral Improvement and Education of the Colored People. In 1869 the city contributed \$5,000 toward the erection of a schoolhouse which had been undertaken by the Freedman's Bureau and in 1871 gave \$1,000 toward the support of their schools, which up to that time had been supported mainly out of private contributions. This contribution was renewed in 1872. In 1873 the Howard School became a part of the city system, and before long the absorption of all the colored schools was accomplished.

The organization of the city high school was begun about 1870, the first high-school class being graduated in 1875. The course then consisted of three years. In 1877 the general organization was as

¹ Wilmington School Report, 1875-76, p. 57.

follows: The primary schools were divided into 12 grades, which were intended to occupy 5 months each; in the grammar school 8 grades covered 4 years, so that the whole time required for preparation for the high school required 10 years. During the school year 1903-4 the high-school course was extended from 3 to 4 years and "for the first time in the history of the school pupils were permitted some choice in the selection of the studies which they wished to pursue." In recent years the curriculum has been divided, and there are now offered three courses of 4 years each: Classical, Latin-scientific, and general. There is a teachers' training school, and a department of manual training was opened in 1899. Then followed industrial training and domestic economy. Medical inspection has been introduced, and compulsory attendance is now enforced. The total expense of the high school in 1911 was \$39,144.14.

In 1888 the Howard School—named in honor of Gen. O. O. Howard, who through the Freedman's Bureau was instrumental in its first organization—was evolved from its humble beginnings into a colored high school. A three-year high school was established at first, but was by degrees developed into a full-fledged four-year course, the first graduates in the latter being the class of 1911. This school contains also a normal department for the education of colored teachers and a manual training department. The total expenses of the colored schools of Wilmington, including the primary, grammar, and high-school grades, was \$52,228.72 in 1911.

Taken as a whole, the schools of Wilmington have had the most even and uniform development of any schools within the State. In the early eighties there was considerable complaint over absentees and the lack of a sufficient teaching force. Evening classes were organized to meet a demand in this line, and in 1885, as a supplement to its work, a drawing school, supported largely by private gifts, was opened and reached an attendance of 133 the first year. The funds raised by taxation were supplemented from time to time by loans made on the faith of the city, and the development of the city's educational system has proceeded with more or less uniformity and continuity in matters of school accommodations, income and expenditure, total enrollment, and average attendance, total available school buildings and increase in the teaching force. All this increase has been brought about in harmony with the general growth and development of the city, the tax rate for schools being now less than 1 per cent more than in 1886-87.

This gradual and steady growth, this expansion and fairly uniform unfolding of a city system, is brought out more clearly in the attached table of Wilmington city school growth since 1872-73. Many other statistics are printed in the city reports, but they fail to give such important items as average salary and total school population.

Years.	Length of term, in days.	School-houses.	Teachers.	Total enrollment.	Average attendance.	Total receipts.	Expenditures.		Value school property.	Tax rate, in mills.	Cost per capita.		High school enrollment.	Negro schools.	
							For salaries.	Total, including salaries.			Based on enrollment. ¹	Based on average attendance. ¹		Teachers.	Total enrollment.
1872-73	153	15	82	5,920	3,355	\$80,577	\$32,548	\$54,782							
1873-74	163	16	90	5,776	3,565										
1874-75	173	17	98	6,033	3,505										
1875-76	183	18	97	6,947	3,720	119,220	43,204	74,854	\$205,339				375		
1876-77	193	18	106	6,687	4,158								370		
1877-78	203	18	110	6,831	4,435								343		
1878-79	213	18	112	6,802	4,287								359		
1879-80	223	18	113	6,983	4,437								379		
1880-81	233	19	116	7,065	4,571								387		
1881-82	243	19	117	7,123	4,600	101,668	54,444	89,370					387		
1882-83	253	20	122	7,675	5,197	80,664	56,823	72,379	314,749				348		
1883-84	263	20	155	8,259	5,718				328,051				402	11	817
1884-85	273	20	161	8,777	6,274					3.25	\$10.47	\$13.20	368	11	888
1885-86	283	20	162	8,677	6,237	120,743	69,363	116,759	398,660				464		
1886-87	293	20	167	8,814	6,170	128,041	90,839	126,700			12.11	15.66	529	12	870
1887-88	303	20	162	8,694	5,809	129,714	78,311	108,332		4.5	10.86	14.51	513	16	1,017
1888-89	313	20	168	8,984	6,233	147,175	90,623	126,079			11.12	14.53	524	17	1,140
1889-90	323	20	175	9,184	6,193	152,284	96,292	130,490	504,237		12.44	16.31	512	17	1,151
1890-91	333	20	187	9,568	6,491	160,043	92,926	147,690	528,817		12.61	16.80	597	20	1,263
1891-92	343	20	193	9,483	6,776	155,323	100,620	148,961	551,817		13.45	16.80	608	20	1,363
1892-93	353	20	199	9,623	6,903	157,502	104,301	146,508	559,517		13.33	18.58	597	22	1,295
1893-94	363	20	207	9,709	7,188	166,287	108,459	166,080	622,797		13.72	18.24	580	24	1,331
1894-95	373	20	208	9,764	7,318	165,283	109,847	165,169	622,797		13.84	18.48	613	23	1,257
1895-96	383	20	217	10,162	7,660	171,088	109,301	164,300	657,817		13.39	17.68	577	24	1,281
1896-97	393	20	226	10,749	8,104	175,685	118,261	170,036	675,505		13.84	18.36	624	29	1,542
1897-98	403	20	233	10,769	7,879	193,556	124,075	167,542	675,505		14.75	20.16	674	31	1,552
1898-99	413	20	245	11,005	8,062	229,332	130,211	184,980	675,505		15.13	20.81	658	33	1,533
1899-1900	423	20	250	11,025	8,078	238,005	134,304	194,966	675,505		15.24	20.80	636	34	1,541
1900-1901	433	20	270	11,019	8,476	400,242	141,566	396,500	931,965		15.76	20.48	631	36	1,560
1901-2	443	20	281	11,230	8,421	237,933	152,365	231,904	931,965		18.45	24.60	736	38	1,646
1902-3	453	20	285	11,304	8,183	234,680	158,106	227,750	931,965		18.32	25.30	743	39	1,640
1903-4	463	20	283	10,949	8,187	236,383	157,420	219,471	931,965		17.42	23.30	704	38	1,423
1904-5	473	20	292	11,009	8,306	252,660	166,829	252,660	931,965		20.26	26.96	821	39	1,407
1905-6	483	20	295	11,194	8,201	261,175	172,765	241,299	931,965		18.84	25.72	921	40	1,437
1906-7	493	20	299	11,102	8,219	326,666	173,955	289,657	968,595		20.26	25.72	904	41	1,404
1907-8	503	20	304	11,051	8,241	299,058	196,167	276,366	968,595		21.98	26.34	966	41	1,436

¹ The totals on which these per capita are based will be found to be smaller than those given in the preceding columns of receipts and expenditures. The figures as given are reproduced from the Wilmington city reports.

Statistics of the public schools of Wilmington, Del., 1872-1916—Continued.

Years.	Length of term, in days.	School-houses.	Teachers.	Total enrollment.	Average attendance.	Total receipts.	Expenditures.		Value school property.	Tax rate, in mills.	Cost per capita.		High school enrollment.	Negro schools.	
							For salaries.	Total, including salaries.			Based on enrollment.	Based on average attendance.		Teachers.	Total enrollment.
1872-9	192	29	207	10,965	8,271	\$235,115	\$103,400	\$318,001	\$1,015,949	4.8	\$22.70	\$30.21	1,087	42	1,473
1879-10	192	30	310	11,108	8,265	314,326	209,793	313,850	1,053,107	4.8	19.35	25.83	1,119	43	1,556
1880-11	192	30	312	11,119	8,189	315,314	213,717	323,493	1,060,907	4.8	19.82	26.00	1,127	44	1,568
1881-12	194	30	307	11,077	8,417	322,240	223,038	326,194	1,137,558	4.6	21.17	27.29	1,043	43	1,394
1882-13	194	30	311	11,859	8,544	367,245	200,686	347,773	1,127,558	4.6	24.10	31.13	1,113	43	1,481
1883-14	193	31	315	11,694	8,802	327,595	200,134	337,057	1,123,986	3.6	23.15	28.90	1,081	46	1,427
1884-15	187	31	327	11,981	9,843	328,540	203,146	315,437	1,133,986	4	21.57	25.32	1,206	48	1,496
1885-16	192	31	347	12,574	9,514	528,009	263,585	398,757	1,191,084	4.6	25.43	32.46	1,331	48	1,414

¹ Since the average attendance for high and negro schools was not available the enrollment was used instead, with result that the cost based on average attendance as here given is a little too small.

III. DEVELOPMENT OF STATE EDUCATION FOR NEGROES.

Omitting the efforts of the Society for the Propagation of the Gospel in the eighteenth century, it will be found that the beginnings of the movement for the education of the Negro in Delaware go back at least to the incorporation of the African School Society of Wilmington on January 20, 1824.¹ It was given the usual powers of a corporate body and might hold property up to \$5,000, but there is no formal statement that its purpose was to organize a school. In 1847 the authority was given the society to extend its holdings from \$5,000 to \$15,000,² but no reports on the actual accomplishments of the society have been accessible. There are indications that now and then negro pupils received a little educational training during the ante bellum period, but this was neither great in amount nor valuable in character. As late as 1866 there were only seven schools for Negroes in the State—three in Wilmington, two in Camden, one at Odessa, and one at Newport. In December of that year a movement was inaugurated in Wilmington by influential citizens of that city, including Mr. William S. Hilles, Prof. Wm. A. Reynolds, Mr. Howard M. Jenkins and others, together with Mr. Francis T. King and Dr. James Carey Thomas, of Baltimore, who were doing similar work in that city. The Wilmington movement resulted in the organization on January 3, 1867,³ of the Delaware Association for the Moral Improvement and Education of the Colored People. The association celebrated its first anniversary on February 28, 1868, with an unusual address by Ebenezer D. Bassett, a colored man, who in a burst of enthusiasm declared that his youth had been spent among white children in New England and his maturer years in teaching colored children and that he could now say "emphatically and conscientiously" that he had "never been able to detect the least difference in the capacities of the two classes of youth to acquire and retain knowledge and thought."⁴

The work of the association was carried on through an agent called an actuary, and beginning with 1867 it undertook to accumulate a fund from which to pay the salaries of teachers in the colored schools. Many private subscriptions were made to its funds and the Freedman's Bureau in Washington donated sufficient lumber to erect some 10 schoolhouses. Rev. John G. Furey became the first actuary, and within six months the association had been able to increase the schools from 7 to 15, 7 being located in New Castle, 4 in Kent, and 4 in Sussex. The actuary had a general superintendence

¹ Laws of Delaware, 1824, ch. 210.

² Ibid., 1847, ch. 135.

³ See Conrad, H. C.: A Glimpse of the Colored Schools, 1883, and Powell, L. P.: History of Education in Delaware, 1893, p. 168. See also some account of this work in Barnard's Report on Education in the District of Columbia.

⁴ Copy of Bassett's address in Library of Congress.

over the erection of buildings, the placing of teachers, and the general conduct of the schools. The association for its part agreed to provide for the salary of teachers, which averaged about \$14 per month; the colored people in the several localities agreed for their part to pay the board of the teachers and to meet the miscellaneous expenses of the schools. This was done by charging the pupils a small tuition fee. Mr. Furey was succeeded as actuary by Samuel Woolman and he in turn gave place to Abbie C. Peckham, who served from 1868 to 1874.

The first annual report of the association was published in February, 1868; others followed in February, 1869, and March, 1870. They are summarized in the reports of the United States Commissioner of Education, 1871-1874, from which the following accounts are taken:

In 1869 the association built a schoolhouse in Wilmington, \$5,000 of the cost being contributed by the city council to cover similar amounts given by the association and by Gen. Howard on account of the Freedman's Bureau. The house was finished in a thorough and substantial manner and was dedicated September 20, 1869. There were then 4 separate day schools in Wilmington which were all united in the new building. There were in Wilmington 150 pupils in the primary grades, with 4 teachers, and 50 in the higher or normal grades with 1 teacher. In the State there were all told, as given in the reported summary, 29 schools and teachers, with a total enrollment of 2,104 and an average attendance of 1,221. Of these pupils 1,297 were in reading and spelling, 711 in writing, 586 in arithmetic, 285 in geography, 76 in grammar, and 273 in the alphabet and primer.

The receipts for the year amounted to \$10,483.24, of which \$2,440 came from the Freedman's Bureau and \$3,833.58 was collected from the patrons of the school through a "weekly charge of 10 cents for each pupil" which was applied to the payment of board of teachers and the purchase of books and stationery. "Howard Associations" were also formed in the State to pay the tuition of poor children. They had 400 members who contributed \$40 weekly, enough to pay the tuition of 400 children.

The actuary urged the need of a normal school for the training of teachers, and on November 15, 1871, she reported for that year 20 schools with 22 teachers; 9 were located in New Castle County, 8 in Kent, and 3 in Sussex; as a rule they were in the towns. The city of Wilmington contributed that year \$1,000 toward the support of Negro schools. This sum and the gift of \$5,000 in 1869 for building seem to have been the first public contributions made to Negro education in the State.¹

¹ Report U. S. Commissioner of Education, 1871, pp. 115-118. The census of 1870 gives 1,196 as the number of negroes who attended school in 1870 and 11,820, 10 years of age and over who could not write.

The work of the Delaware Association for 1872 as summarized¹ is not so complete nor so encouraging as that of former years. Funds were shorter because the Freedman's Bureau and certain friends in England had withdrawn their support. For these reasons the association had to depend more on the school localities and patrons. Wilmington city again contributed \$1,000 to the work, although there was no provision made for the education of Negroes "by either the State or town authorities." Eighteen schools with 21 teachers were reported; the schools were in session from two to nine and one-half months. The teachers were all colored women except the principal of the Howard School. The highest enrollment reported was 984 in January, 1872, with an average attendance of 858; about half of these pupils were over 16. The total expenses were over \$5,000, the association paying about one-half and the patrons the other half. In conclusion the report says: "Throughout the State there is a marked decrease of unfriendliness toward our work exhibited by the white people."

The reports for 1873 were more encouraging than in 1872. In the latter year the State board of education took over and made a part of the public system the Howard School of Wilmington, which, as has been shown, already was organized through the joint efforts of the city council of Wilmington, the Freedman's Bureau, and private citizens. The president of the State board wrote also that he was favorably impressed by the benefits conferred by the Delaware Association in helping the local committees in the selection of teachers, in the purchase of uniform textbooks, and in making reports. He then adds: "I think it is not too much to assume that in consequence of this supervision the colored schools in some parts of the State are in better condition and more efficient in their work than the white schools."²

The association itself reported that for the year 1872-73 there were 21 schools with an enrollment of about 1,800; the average attendance was 866; the association spent about \$4,000, of which about \$3,000 was raised by private subscription in and near Wilmington, while the colored people raised and expended on their own account about \$5,000 for board and salary of teachers, repairs, etc.³

The association had 28 schools with 28 teachers and an enrollment of about 1,200⁴ in 1874 and with that year the first chapter in the history of negro education in Delaware comes to an end.⁵

¹ Rep. U. S. Commis. of Ed., 1872, pp. 55-56.

² *Ibid.*, 1873, pp. 58-59.

³ *Ibid.*, 1873, pp. 63-64.

⁴ *Ibid.*, 1874, p. 56.

⁵ For the sources for this phase of education in the State, see the Delaware Association's reports transmitted to the U. S. Commissioner of Education and printed in his Reports for 1871-1874; Conrad's A. Glimpse at the Colored Schools (Wilmington, Del., 1883) and his History of Delaware (1908), III, pp. 816-819. See also, Powell, L. P.: History of Education in Delaware (1893), p. 168.

In 1875 private philanthropy begins to give way to State action. Up to that time all efforts had been the result of private initiative given through the Delaware Association, supplemented by such help as the negroes could themselves render. Up to 1875, with the exception of the help given in Wilmington, "there had been no donation made by the State; neither had there been any legislation that recognized in any way the colored children in the educational system of the State."¹

There had been, however, at least an attempt made to make such a connection. The sponsors of the State school bill proposed in 1873 had tried to effect this union, but failed. They had proposed that under given conditions the colored population of any neighborhood might be allowed to raise \$75 in the manner then prescribed by law. The effect of the proposed law would have been to organize a second county system, parallel with that of the whites, each race supporting its own schools. But this proposal went down with the defeat of the general law.²

In 1875 there came the change. Two acts of that session dealt with the question of Negro education. Chapter 48 allowed the levy courts to lay an annual tax of 30 cents on the hundred "upon the assessment of the real and personal property and poll of colored persons," the proceeds of which was to be set aside "as a separate and distinct fund for the support and maintenance of colored schools in this State."³ These taxes were to be collected in the usual way and paid over to the county treasurer, who was to keep them as a separate fund and pay them out to the treasurer of the Delaware Association by whom they were to be devoted "to the support and maintenance of colored schools," each county receiving such sum as it has paid in. Another act (ch. 47) allowed a tax on the dogs of negroes, to be collected in Sussex for the benefit of negro schools in that county.

As has been pointed out in case of the act proposed in 1873, the result of the acts of 1875 was to create a second educational system in Delaware, alike in scope and character to that which had been evolved for the whites through two generations of effort and differing from it only in the amount of its resources.

In the beginning the Negro schools seem to have made slight impression, for there is no mention of this phase of the work in the free-school report for 1875-76. Mr. Henry C. Conrad became actuary of the Delaware Association in May, 1876, and remained in charge of this work for about 16 years, when it was finally and completely absorbed into the State system. He made regular reports to the State au-

¹ Conrad: *Glimpse at the Colored Schools*, p. 7.

² Report U. S. Commis. of Ed., 1873, pp. 51-52.

³ An amendment of 1881 required each hundred to receive back again its own taxes paid in and no more, and the lowest number of pupils permitted was fixed at 15.

thorities, and as these reports are printed as a part of those of the State superintendent, it is possible to trace the steps by which the work was gradually taken over by the State.

In 1878 Mr., now Judge, Conrad pointed out that the school tax yielded only income sufficient to pay about one-third of the expenses of the schools, the other two-thirds had to be raised mainly among the Negroes themselves, but—

notwithstanding the stress of the times and the great scarcity of money among this particular class, in almost every instance the teachers' salaries and other expenses of the schools have been promptly met and the schools closed free from debt.

This was the situation of affairs from 1875 to 1881. During this period the Negroes were bearing the entire burden of supporting their own schools. The income of the Delaware Association had fallen off so much that it could now do little more than employ an agent. The employment of this agent or actuary was always deemed by the association as a wise and necessary action, for he looked after the selection of teachers, controlled the disbursing of funds, and was in entire control of the colored schools. He was in reality more of a State superintendent within the limits of his province than was the officer who bore the title.

The first direct participation of the State as such in the education of the Negro was through the act passed on March 22, 1881. This was doubtless in response to an appeal from Actuary Conrad for State aid. In the report for 1880 State Supt. Groves quoted with approval the reference of the actuary to the "self-sacrificing efforts the colored people of this State have been making for the last 12 years," and urged that the State respond to their request for financial aid. In response to this appeal, and largely through the efforts of Thomas N. Williams, then chairman of the house committee on education, later State superintendent, the State made a direct appropriation of \$2,400 for the general purposes of education among the colored population. It was provided that this money should be disbursed by the Delaware Association. It was to be divided equally, but no school should participate in the distribution of this fund unless it was open for at least three months and had had an average attendance of 20 pupils.¹

In 1883 another act was passed² which went a step further in fostering Negro schools. It charged the State superintendent with "the general supervision of the colored schools of the State" and provided \$5,000 per annum out of the State treasury for the promotion of negro education, instead of \$2,400 as under the law of 1881. The law of 1883 provided further that the State fund should be divided equally between the counties and between the various schools in the county. It was required that the school should be at least

¹ Laws of 1881, ch. 362, passed Mar. 22.

² Laws of 1883, ch. 48, passed Apr. 19.

three months in length and have an average attendance of at least 12 pupils. The taxes collected from Negro citizens were still kept separate.

The State superintendent reported for the year ending December 1, 1884, the income of colored schools as follows: State appropriation, \$4,987.34; colored school tax, \$2,873.69; Delaware Association, \$315.25; total, \$8,176.28. The average amount paid each school per month was \$24, and the term varied in length from four to eight months, but there was for the year no marked increase in attendance. Wet weather and bad roads were made responsible for this failure. It was reported that in some schools it was still necessary to charge a small tuition fee, but the increased appropriation from the State had brought these schools "much nearer to a 'free school' system."

The report for 1886 was made under the same law. There had been "substantial and encouraging progress." There were 69 schools outside of Wilmington with an enrollment of 3,563, and \$7,166.69 had been received, of which \$4,655.63 came from the State appropriation and \$2,511.06 from taxes. "Well-educated, industrious, and earnest teachers" had been employed, and the average term was 4½ months. The actuary points out the schools of New Castle, Middletown, Newark, Smyrna, Milford, Seaford, and Lewes as strong, while the one in Dover would "compare favorably with many of the graded schools," but "more suitable and comfortable houses" were needed. It was suggested by the superintendent that "many of the schools in the larger towns might be made more efficient by allowing them to form local boards and to increase their facilities to meet the expenses of the schools."

This suggestion of the superintendent was evidently the basis for the legislation of 1887. In that year another phase of the movement appears in the incorporation of negro schools in Dover and Slaughter Neck.¹ The former was a town, the latter a country district. Each was exempted from the general tax provision of 1875 relating to negro schools and was permitted instead to levy a special tax on all negro citizens within its bounds. Each was given also its share of the State apportionment for colored schools. Each had authority to elect its own board of directors and each entered on an official life similar in all respects to the incorporated white schools. This separate incorporation of negro schools had its highest development in 1889, when the negro schools in Seaford, Kenton Hundred, Lewes, and Milford received such charters. The Colored A. and M. College was founded in 1891, but no special charters were then granted, probably for the reasons intimated in the 1892 report of the county superintendent of Sussex, who says that in the matter of administration the negroes had "absolutely failed with the provisions of the law grant-

¹ Laws of 1887, chs. 63 and 89.

ing them power to levy and collect school taxes in certain districts. They are not sufficiently intelligent to deal with the matter of taxation." To prove this he cites the fact that while they levied \$1,449 in Sussex they collected only \$569. More effective methods of collecting the tax were needed, and it was suggested that each school district be required to contribute a certain amount of tax for its own support, as the white schools were required to do. It is evident that this view of the situation was accepted, for no acts of incorporation for negro schools were passed after 1889, and in 1893 all incorporated colored schools were abolished, and they were then subjected "to the same laws and under the supervision of the superintendent of schools for the county in which they are situate, in the same manner as now by law provided for unincorporated colored schools."¹

Another act of the session² of 1887 codified and extended the earlier acts. Provisions for a general tax of 30 cents on the hundred on "real and personal property and poll of colored persons" throughout the State were now made.³ Six thousand dollars was provided as a general contribution from the State, to be divided equally between the counties and equally between the schools in each county; the school taxes were to be expended in the hundreds where raised, and the county superintendents were given "general control and supervision of the colored schools in their respective counties." With this law the separate organization of Negro schools was completed and made parallel with that of the whites. The State and county superintendents had coextensive authority over each; there was the same uniform general tax levy required; special incorporated schools, independent of the State authorities, had been inaugurated; and a State fund, direct from the treasury, had been provided.

The actuary reported for the year ending December 31, 1888, that the recently incorporated schools at Dover and Slaughter Neck were "working satisfactorily to all concerned." Dover was the largest school in the State, with an enrollment of 142; Middletown had 123, and the other incorporated school at Slaughter Neck had 102. The total number of schools was 69, with an enrollment of 3,570. The total available funds were \$7,537.25, of which \$5,364 came from State appropriation and \$2,173.25 from school tax. It will be noticed that the Delaware Association had now ceased to contribute to the fund. Although Mr. Conrad was still in nominal control as actuary, the real control had been transferred to the county superintendents by the act of 1887, but inasmuch as Mr. Conrad had been the agent of the Delaware Association since May, 1876, and as he had directed

¹ Laws of Delaware, 1893, ch. 602, sec. 14.

² Ibid., 1887, ch. 91, passed Apr. 22, 1887.

³ Ibid., 1887, ch. 91.

all the work of the association and made its reports, he had been permitted to remain in office. There were, however, indications that the question of Negro schools was now getting into politics, and the county superintendent of Kent announced that the next year he should relieve Mr. Conrad of the work.¹

Up to this time the Negroes had had few schoolhouses of their own. They supplemented these few with quarters obtained in private houses, in churches, or society halls. In 1889 the State began to meet their needs in this respect by ordering the authorities of Lewes to contribute \$500 of public money toward the erection of a schoolhouse. The act of 1891 increased the annual appropriation from \$6,000 to \$9,000 per year and directed that of this latter sum \$500 per year for four years should be devoted to the repair of schoolhouses, provided local patrons would contribute half as much as the State; the auditor was now directed to audit the accounts of the colored schools; in the matter of free textbooks they were put on an equality with the whites, and by the same act the "entire management, control, and supervision of the colored schools" was put into the hands of the county superintendents.²

About this time also (1892) the work of the Delaware Association was brought to a close. There was no report in 1890 or 1892 from Actuary Conrad, for the colored schools were taking their place as a coordinate part of the dual school system of the State. The second chapter in the evolution of Negro schools had been closed.

The statistics of the colored schools from 1876 to 1892 follow below. They were compiled in the main by Henry C. Conrad, actuary for the Delaware Association from May, 1876, to 1892. No other items are given with sufficient uniformity to make a comparison of one year with another of any value. Certain other statistics of colored schools are given in connection with the schools of Wilmington, but in general in recent years, the statistics for the State as a whole have not been sufficiently differentiated to make them of service.

¹ State superintendent's report for 1888, p. 33.

² Laws of Delaware, 1891, ch. 66, and 1893, ch. 602.

Statistics of negro schools, 1876-1892.

Year.	Number of schools.	Average length of term in months.	Total enrollment.	Receipts from taxes.	Total available receipts, including balances.	Paid to teachers.	Total expenses.
1877-78:							
New Castle, 1876.....	15	5.0	679	\$1,034.03	\$735.00	\$620.00	\$642.75
Kent.....	18	4.5	972	862.75	1,048.42	825.00	863.85
Sussex.....	14	3.3	565	206.93	206.93	279.00	263.25
1879-80:							
New Castle.....	14	5.0	634	1,408.29	1,190.70	488.25	488.25
Kent.....	19	4.5	990	746.45	581.58	703.75	793.75
Sussex.....	17	3.0	630	500.00	465.68	365.75	365.75
1881-82:							
New Castle.....	15	.....	610	751.81	1,454.26	636.00	.....
Kent.....	18	.....	911	1,178.53	916.16	817.87	817.87
Sussex.....	13	.....	476	.....	99.93	338.00	338.00
1883-84:							
New Castle.....	24	5.7	1,734	998.60	2,665.93	.....	.....
Kent.....	23	5.0	1,495	1,120.11	2,853.05	.....	.....
Sussex.....	22	5.0	903	765.48	2,724.48	.....	.....
1886:							
New Castle.....	24	5.8	1,872	754.39	2,421.95	.....	.....
Kent.....	25	4.7	1,486	994.75	2,661.50	.....	.....
Sussex.....	24	4.4	1,045	761.92	2,362.00	.....	.....
1888:							
New Castle.....	19	5.0	965	690.00	2,210.25	.....	.....
Kent.....	26	4.8	1,508	966.90	2,890.90	.....	.....
Sussex.....	24	4.4	1,097	516.10	2,436.10	.....	.....
1890:							
New Castle.....	27	7.5	2,023	474.45	2,474.45	726.11	.....
Kent.....	30	4.5	1,501	860.73	2,680.73	723.50	.....
Sussex.....	28	4.5	1,132	1,098.03	3,098.03	723.50	.....
1892:							
New Castle.....	22	.....	.....	.....	.....	.....	.....
Kent.....	30	5.2	1,566	.....	.....	.....	.....
Sussex.....	32	4.6	1,047	569.89	3,513.93	22.59	.....

¹ Includes \$657.90 tax for 1876 and \$376.13 for 1877.

² Where the total in this column is less than the total in the preceding column, it means that the difference was used in paying debts contracted in the preceding year.

³ Balance on hand from June 30, 1877.

⁴ New school tax in New Castle in 1879 was \$1,260.53 (see Aud. Rep., 1880-81, p. 66); and in Sussex, \$571.38 (p. 124).

⁵ The statistics as given leave it uncertain whether this and the amounts following were or were not the whole sum derived from taxation. It is entered as "amount paid from school tax fund."

⁶ Highest monthly enrollment.

⁷ Average monthly salary.

⁸ Miscellaneous statistics of Negro schools for various years: Average salary of teachers in Wilmington, 1899 and 1900, \$40.79 per month; number of teachers, 96; in 1878, enrollment, 1,663; in 1880, population, 3,954, and enrollment, 2,216, excluding Wilmington; in 1882, population, 5,300, and enrollment, 1,997, excluding Wilmington; in 1884, population, 5,500; in 1886, population, 5,750; in 1889, population, 5,542, and enrollment, 4,356, average attendance, 2,851; in 1909-1900, enrollment, 4,897; available receipts, counties not differentiated (reckoned apparently on a different basis); in 1894, \$12,199; in 1895, \$11,418; in 1896, \$15,049; in 1897, \$13,959; in 1898, \$18,660; in 1900, \$20,420. When the Negro schools became thoroughly incorporated into the public-school system, separate statistics disappear.

Chapter VI.

THE STATE SYSTEM: ADMINISTRATION OF THE STATE BOARD OF EDUCATION, 1887-1898.

As shown in the last chapter, there was a State superintendent in Delaware from 1875 to 1887. This meant that there had been some growth in the idea of centralization in the State, but it should not be thought that this idea had taken a deep and abiding hold on the people. It is true that there was a State superintendent, but his powers of direction and control were limited. He had authority to visit the schools; he examined teachers and granted certificates; and there his power stopped. He had no authority over the levying of taxes. A small minimum tax for each district was demanded by State-wide law, but all beyond that minimum was still in the hands of the local school district electorate; and as they had done in 1830, they were still doing 50 years after that date—quarreling over the amount of the tax levy, with the poor man, the man who had little or nothing to be taxed and many children to be schooled, not on the side of a larger local tax which his rich neighbor would pay, but generally against such tax. And after the tax levy was finally fixed and the tax collected, neither the State superintendent nor his representatives had any voice in spending the same. This authority was in the hands of the local school committee; all the State could do was done through the veto power of the auditor before whom the accounts were brought once a year for settlement.

Then, too, the superintendent was appointed by the governor, and for one year only, thus making change in personnel or in policy subject to the caprices of political fortune or the personal whim of succeeding governors. It was plainly very difficult for any superintendent in this State to inaugurate and carry to completion any systematic plan of educational development, for his tenure of office was not long enough and his powers were not sufficiently great.

It follows, then, that when the State superintendency was abolished in 1887 and a return made to the older individualistic county system, the change was neither as great nor as serious in the matter of decentralization as might be imagined.¹

¹ This change did not meet with universal favor. As early as 1891 Gov. Reynolds recommended that the superintendency be restored. See his message for that year.

I. THE STATE SCHOOL LAW OF 1887—LATER LEGISLATION, 1891-1895.

Under the law of April 7, 1887, the positions of State superintendent and assistant State superintendent were abolished from and after April 13, 1887, the expiration of the term of the persons then in office. In their place the governor was given power to appoint annually a suitable person to be superintendent of free schools in each county, with a salary of \$1,000 per annum. These county superintendents were required to be of good moral character and "well qualified by their mental and scholarly attainments for such office."¹

It was the duty of the county superintendent to visit each school within his county at least twice each year. He was to note the condition of each school; the condition of the buildings, grounds, and fixtures; the efficiency of teachers; the conduct and standing of pupils; the methods of instruction and government. He was to advise with teachers, giving them such help and instruction as was deemed necessary, and might suspend any teacher who refused to comply with "reasonable directions" from him. He was to examine all teachers, by oral or written examinations or both.² The field covered by the examinations and the grades of the certificates were not changed from the requirements established by the act of 1879. The certificate itself was now issued by the State board and countersigned by the county superintendent, and no teacher might be employed who did not hold this certificate.

The county superintendent was required to make an annual report to the president of the State board and was forbidden to purchase any books used in the public schools at the expense of the State.

The State board of education was made up of the secretary of state, who became its secretary ex officio, the president of Delaware College, who became president of the board, and the three county superintendents. It met once a year, heard appeals, chose textbooks for the schools, issued blanks and forms, and required returns to be made. The president was required to make a biennial report to the governor, beginning with 1889.

The county superintendents were required to hold in each county annually a teachers' institute of at least three days in length, for the maintenance of which \$100 was provided annually from the school fund. Both county superintendents and teachers were required to attend these institutes, and teachers were to make quarterly reports on their schools.

¹ In 1895 (ch. 13) this requirement was changed so as to read, "and shall hold a certificate of graduation from a reputable college or an unexpired certificate of the highest grade provided for by the laws of this State, and shall have had at least two years' experience as a teacher in the public schools of this or some other State."

² The manner in which this phase of the work was conducted was a source of irritation. Thus, in *House Journal* for 1899, pp. 912-3, is the record of a spat on this question. Mr. Shallcross complained over the character of these examinations and charged that the county superintendents gave catch questions. He thought the educational system was retrograding, and thought in a little while it would be back where it was a hundred years ago.

Books and papers of the State superintendent's office were to be turned over to the secretary of state, who was to sell all schoolbooks received and cover the money into the treasury. The county superintendents were to do the same, and these sections, when read in the light of the paragraph forbidding the county superintendents to buy schoolbooks out of public funds, show that the State was now abandoning the plan of supplying schoolbooks at cost, while still holding to the idea of State uniformity.

All acts and parts of acts not in conformity with this act were repealed, but all provisions for suits, etc., were continued in force and finally:

The provisions of this act shall not apply to any school or school districts managed or controlled by an incorporated board of education, unless by special request of said board.¹

It will be noticed that the act of 1887, by repealing all acts not in conformity with its own provisions, finally separated the State from the terms of the act of 1829, but in other respects the character of other phases of school legislation was not changed. All authority pertaining to the borrowing of money for school purposes, consolidating, dividing, or changing the boundaries of districts, etc., still went through the legislature. The people were held competent to manage the local money side of education, from levying the tax to spending the sums raised, but they were not thought competent to change school district boundary lines, although an act of 1891 (ch. 67) required a notice of 10 days for transfers of territory from one district to another and for the consolidation of districts.²

Hardly had the act of 1887 been put into execution before the usual process of amendment began. It will be recalled that the act of 1887 practically abandoned the scheme of free textbooks. The act of 1891 not only went back to the principle, but made textbooks really free. They were now to be bought by the State, and distributed to the school districts, and by the school commission loaned to the pupils or sold at cost when it was so desired. The colored schools were admitted to a participation in this provision, and their "entire management, control, and supervision" was put into the hands of the county superintendents, as already narrated in an earlier section. Their funds were increased and were to be examined and passed by the auditor just as was done in the case of the white schools, but because of inexperience in matters of finance it was thought best to repeal in 1893 the acts granting charters of incorporation to certain negro schools.³

¹ Laws of Delaware, 1887, ch. 67, passed Apr. 7, 1887.

² The auditor's report in 1894 (p. v) points out that the transfer of real estate from one school district to another was frequent and unjust; that this legislation was often effected without apparent opposition simply for want of funds to defray expenses of school officials while making such opposition. It was thought that the settlement of such matters should be left with the State board of education. In his message in 1891 Gov. Biggs recommended that no further changes in school districts be allowed except on application by a majority of the school voters in each district.

³ Laws of Delaware, 1893, ch. 602, sec. 14.

In 1891 the composition of the State board was itself changed, for the president of Delaware College ceased to be a member, and the governor of the State became its president ex officio, and finally the schools of Wilmington were exempted from the provisions of this act.¹

In 1893 came other changes. A general act provided a new basis on which the State money was to be apportioned within the counties. The share of Wilmington was to be predicated on 10,000 school children; in New Castle County each district was to receive \$150; and any remainder was divided on the basis of enrollment. In Kent and Sussex the division was to remain as already established by law. The income of the State school fund could be used only for the payment of teachers and at a rate not to exceed \$35 per month. The purpose of this section was clearly to encourage local taxation, and the purpose of the section which required unexpended balances to be deducted from the next year's appropriation was without doubt to break up the custom of hoarding balances for the sake of private speculation.

In 1893 the requirements for teachers' certificates were raised. They now include orthography, reading, writing, mental and written arithmetic, geography, physiology, history of the United States, pedagogy, and English grammar; and in addition to the above they included for the highest certificate algebra, geometry, civics, natural philosophy, and rhetoric. The grading was made a little closer, and the professional certificate was made good for four years.

In 1895 and 1897 the acts of most educational significance related to negroes. The most important in 1895 was that "to improve and promote the colored schools." This act made the county treasurers responsible on their bonds for the funds received under the act. The appropriation for negro schools was increased from \$9,000 to \$12,000 per year, to come out of the school fund. From the same fund there was also appropriated annually \$3,000 for textbooks and building purposes. This was to be divided equally between the three counties, and the three county superintendents were to act jointly as a building board, determine where repairs and alterations were to be made, and provide for the erection of new buildings when deemed necessary. The county superintendents were also confirmed in "the entire control and supervision of the colored schools." They were to decide on their location, to make rules for the examination of teachers, and to "appoint only such persons as teachers are fully qualified in point of character and scholarship to fill the places." They were to make an estimate to their respective county treasurers showing the number and location, length of term, and amount of money required for and applicable to each school,² and were to appor-

¹ Laws of Delaware, 1891, ch. 66.

² This section was repealed by ch. 422, acts of 1897.

tion to each school an equal amount from the State contribution; the monthly allowance to each school was to be equalized as nearly as possible, and the amounts collected in any county in colored taxes were to be expended in that county.¹

In 1897 the State granted \$100 per year for the establishment, support, and maintenance of the Delaware Colored Teachers' State Institute, to be located in Kent County.² With these various acts the work of taking over the colored schools from the independent private organizations by which they had been begun and transferring them to the State administration was practically complete. The systems of colored schools now duplicated at most points the white schools. Two systems independent of and parallel to each other were administered by the county superintendents.

When a summary review is made of the legal side of the school situation between 1887 and 1898, certain contrasts and changes, as compared with the earlier period (1875-1887), become apparent. In these changes (1) the State board of education just about held its own. It gained the additional right to issue the teachers' certificates, but this was little more than mere form, since the county superintendents had the power to pass or not to pass the teachers examined. (2) The county superintendent's office was reestablished, after having been abolished by the act of 1875; the State superintendent's office was abolished; his powers were decentralized and given to the county superintendents. (3) The State system of uniformity in textbooks was maintained, but the State at first did not undertake to purchase and furnish books to all pupils at cost, although they went a step further in 1891 and made them entirely free. (4) Reports were now made biennial instead of annual, so that the published volumes covered the whole intervening period instead of a single year of a two-year period as was apparently the case in the annual reports between 1875 and 1887. (5) The support of the county institutes was made a regular and formal charge on the school fund, and a similar institute for colored teachers was also provided. (6) The colored schools were formally and completely transferred to the State system, but with their own organization independent and separate from that of the whites; the special acts of incorporation being repealed, all colored schools were now treated as a single unit. (7) Nothing was said in these laws in regard to the financial side of the schools. This was still a purely local matter, and he who controlled the sinews of war of necessity controlled the system. So little did the idea of centralization impress the new system that for some years there was no summary of statistics for the whole State; and so little did the ques-

¹ Laws of Delaware, 1935, ch. 17; amended in minor particulars by laws of 1897, chs. 421 and 422.

² Ibid., 1897, ch. 423; amended by ch. 70, laws of 1898.

tion of finance impress the county superintendent that in some cases there were no county statistics dealing with income and expenditures.

When taken as a whole the State system in Delaware was then about as follows: A State board of education with small advisory powers, and under the State board three practically autonomous republics, each administering a system for white schools and a corresponding system for colored schools, each of the six systems independent of all others, and obeying only its own head. Then in each county was a series of "independent districts" for whites which were not subject to the laws of the county systems unless they chose to be and made "special request" to come into the general system. Paralleling the series of white "independent districts," there were, until 1893, corresponding colored "independent districts," not so numerous as the white independents, but with similar powers. And finally, in addition to all of the above, came the city of Wilmington in most respects separate and distinct from everything else, independent of everybody else, and a law unto itself alone.

This anomalous situation makes itself felt even in the biennial reports of the State board. Those for this period are divided substantially into three parts. The first is a short and imperfect discussion of the free schools as a whole and with little attempt at correlating and unifying the separate reports and out of them evolving a single, concatenated, fully systematized whole. The statistics are brief and incomplete and fail to give a connected picture of the situation in the State. The second division presents the reports of the three county superintendents with such statistics as are available, but unfortunately neither uniform nor complete, and sometimes with similar reports on the colored schools. Then comes a report of the city of Wilmington, and then another on the schools with incorporated boards.

The duty of the historian, then, is to evolve a connected story out of the elements presented by these rival systems. The Delawareans have themselves never as yet had the hardihood to face this confused situation, prepare a detailed report that will cover the whole field, and reduce this complex system to a single, simple whole—*hoc opus, hic labor est*.

II. PUBLIC SCHOOL DEVELOPMENT, 1887-1898.

The period now under consideration, 1887-1898, is represented by three printed reports. These are for the biennial periods 1887-88, 1889-90, and 1891-92. Apparently there were no reports published for the years 1893-1898, and the history of that period must be reconstructed from the governor's messages, the auditor's reports, and other sources.

Fortunately some of these messages are full of valuable material. Such is the message of Gov. Jones in 1887,¹ in which he reviews the status of the school fund for that period.

The receipts of the school fund for the previous year were \$101,027.57. The expenditures were:

New Castle County.....	\$32, 358. 26
Kent County.....	23, 256. 59
Sussex County.....	23, 136. 10
Education of the blind ²	1, 040. 00
Total expenditure.....	84, 790. 95
Balance on hand.....	16, 236. 62

The principal of the school fund was then invested as follows:

Farmers' Bank stock, 5,000 shares, at \$36 per share.....	\$180, 000
Farmers' Bank stock, 2,439 shares, at \$50 per share.....	121, 960
Smyrna Bank stock, 114 shares, at \$50 per share.....	5, 700
National Bank of Delaware stock, 37 shares, at \$465 per share.....	17, 205
Union National Bank, 254 shares, at \$36 per share.....	9, 144
School fund bond ³	156, 750
Loan to Sussex County ⁴	5, 000
Total in 1887.....	495. 749

The same valuation was given in 1889. In 1893 the fund had increased in value to \$544,742, and in 1897 to \$546,577.

The report for the biennial period 1887-88 is signed by A. N. Raub, president of the State board of education. It is more precise and definite, fuller, and more detailed than some which follow, but while this general supervisory body had authority to supervise and inspect, it had little power to enforce obedience. As is natural, the schools of Wilmington were far ahead of those in the smaller towns, and in general New Castle County had the best organization, the best buildings and furniture, and the best schools. The reports from that county showed the keenest interest and closest analysis of the situation and undoubtedly its schools were ahead of those of other

¹ House Journal, 1887, p. 12 et seq.

² The education of deaf, dumb, blind, and imbecile children is provided for in institutions outside the State. The number of imbeciles is limited to 14, at \$200 each, making \$2,800. The number of the deaf, dumb, and blind is limited only by the amount of the appropriation. See governor's message, 1903.

³ This item was in the form of a bond issued to the fund July 1, 1877, by the State of Delaware. This sum of \$156,750 was made up of two items: One of \$131,750 received from the sale of stock in the Philadelphia, Wilmington & Baltimore R. R. and covered into the State treasury, and the other of \$25,000 proceeds of the sale of stock of the New Castle & Wilmington R. R. Co. Both of these items belonged to the school fund, but were both covered into the State treasury. In payment the fund was given a bond for \$156,750, due July 1, 1906. See treasurer's report for 1891-92, pp. 4-5. On July 1, 1906, this bond was redeemed, a balance of \$22,035, proceeds of the liquidation of the Farmer's Bank at New Castle and belonging to the school fund was added to the principal and a new bond for \$178,785 was given by the State to the school fund, with interest at 6 per cent payable in 1931. See ch. 19, sess. laws of 1906.

⁴ This loan to Sussex County came out of the surplus revenue and was made soon after the receipt of that fund. By act of Feb. 6, 1877 (ch. 498, sec. 1), the county of Sussex was required to set apart out of its general revenue \$300 which was counted as interest on this debt, and was then given back to the county to be used on its schools. The remainder of the annual school fund derived from the surplus revenue of 1837 was divided equally between the three counties.

counties, but these facts do not necessarily imply criticism of others. New Castle County has less than one-fourth the area of the State, but it has the only city, more than half the population and wealth, and more than its share of the educational leaders. Within its restricted area organization has been possible which could not be carried out in the more rural sections.

One of the matters which impressed the president of the board as of the greatest significance in 1887-88 was teachers' certificates. It was thought that the distance between the third and the second grades was too great, and it was proposed to decrease the gap by bringing down by 5 numbers the requirements for the higher grade and raising those for the lower by 10 numbers.

For the first time compulsory attendance is mentioned. It was being discussed in other States, but as Groves had opposed it a decade before, so now Raub found that he could not "recommend such a law for Delaware." He thought it might be possible in a city "backed by a constabulary force," but "it has never been either effective or popular in communities chiefly agricultural, and it would not probably be so in this State."

The president of the board pointed out that the system of separate school districts then in force in the State represented a unit too small for the best results. More or less progress was reported all along the line, it is true, but that progress was uniform neither chronologically nor from school to school. This irregularity was made possible because of the freedom of initiative allowed to the school district unit; but unfortunately desire, ambition, and knowledge were not equal in all sections; opportunities and facilities were not uniform; individual initiative not equal; wealth and resources not the same. As one county superintendent said, the schools were good, bad, or indifferent according to the district, and little hope of improvement was to be indulged in while the district remained as it was.

The president of the board pointed out that the State system "would be greatly benefited by making each hundred a school district." This hundred system would compare in a general way to the township system of other states:

In Delaware this same system would greatly increase the efficiency of the schools. Either of two plans might be adopted. The hundreds, as at present constituted, might each be made a separate school district, in which each school under the general board of control would offer the same educational privileges and facilities as its neighbors in the same hundred. At present one school in a hundred may give 40 weeks' instruction during the year, while its neighbor in the same hundred, * * * may offer to the children only 30 weeks. The hundred system would correct all such inequalities.

A modification of this system might be made probably equally effective by dividing the hundreds as school districts into incorporated boroughs and rural districts. Thus a hundred with one incorporated borough would have two school districts. * * * This is really the township system of such States as do not have the separate district

systems. Wherever adopted it makes more efficient schools, equalizes the taxes, and does away with the jealousy which seems inevitable between the boroughs and the rural districts.

By no means the smallest gain of this system would be the ultimate establishment of hundred high schools.¹

The school authorities had now arrived at that stage in their development when they began to realize the disadvantages of their highly decentralized system. It is evident that they felt the need of greater concentration, even if they were not yet ready to demand a general law providing that all school administrative systems be brought under a single head. The president of the State board says further:

The school system of Delaware would be more efficient and the results more satisfactory if all the schools were under the jurisdiction of the county superintendents, excepting, of course, such districts as have their own superintendent. Practically, at present, the schools having incorporated boards of education are without supervision except that given by the commissioners and their teachers are exempt from examination unless the local commissioners decide to the contrary. In fact, the act providing for the appointment of county superintendents and the examination of teachers and the supervision of schools by these officers specially exempts * * * these districts. * * *

This singular feature of the school system of Delaware, of course, destroys the unity of the whole system and makes it specially difficult to form an accurate estimate of the actual progress of the schools.

It would be much better for these incorporated boards if they would unite in a demand for a hundred system, toward which their action practically tends, and then place all the schools of a county under the jurisdiction of the county superintendent, except those which have an officer who is distinctively superintendent of the schools of the town or city in which he is located, and who exercises the superintendent's powers in examining teachers, granting certificates, visiting schools, and the like. It would be greatly to the advantage of all districts, incorporated or otherwise, if the whole system could be harmonized and unified in the way suggested.

The county superintendents themselves were not less emphatic in their condemnation of the existing system. Levin I. Handy, county superintendent of Kent County in 1887-88, charges most of the weaknesses of the schools at the time to the smallness of the unit of administration. Among these evils he reckons as hindrances to progress: The constant changing of teachers, which was so bad in some districts that four different teachers would be in charge of a single school within a single year; the lack of uniformity in the certification of teachers, for each county superintendent was a law unto himself and if one refused a certificate the applicant might be licensed in another county or given a teaching position in one of the incorporated schools which lay alongside of, but were entirely independent of, the regular school districts.

The above troubles, and also the lack of system and classification, the neglect of school property and furniture, the unwise parsimony of

¹ Report for 1887-88, pp. 9-10.

² See ch. 46, laws of 1879, and ch. 67, sec. 17, 1887.

school officers, the surplus—all these evils are charged up by Mr. Handy as due to the smallness of the unit of school administration. In place of the school district there was an insistent demand for the hundred—the township of most States—as the basis. The school district had now been outgrown. It was time for a larger unit.

The governors in several cases went even further than the county superintendents. In 1891 the outgoing governor complained of the custom of incorporating school districts and thus removing them from the jurisdiction of the supervisory authorities, while the incoming governor, Reynolds, suggested the reestablishment of the State superintendency. This recommendation he renewed in 1893, and in 1897 Gov. Watson recommended the repeal of the special acts of incorporation, on the ground that these schools had not kept pace in development with those over which the superintendent had jurisdiction.

These complaints reveal the fact that the situation was in some respects a very curious one. Among others, it was found that there was no lack of money. The State school fund produced more money than could be "properly or economically spent" in some parts of the State under the existing laws, without even touching the local fund which the district was required to raise by taxation. This situation had been brought about in the main by the act of 1889 regulating the sale of intoxicating liquors.¹ The tax on licenses was by this act increased and as it went to the school fund, the income from this source was raised from \$23,689.57 in 1889 to \$65,783.34 in 1890.

With this sudden increase in funds came difficulty from "the lack of knowledge how to spend the money judiciously, or what is more probable, an indisposition to spend the money for purposes which all admit to be judicious." It was recommended that the county tax levy for schools be lowered, for it was thought that the school fund, through the large increase in the liquor license tax, would before long make any school tax unnecessary.

Another recommendation was that this growing surplus be used to supply free textbooks to all the children of the State, and to this use a part of this surplus was devoted in 1891-92.²

Nor was this surplus without its dangers. The custom grew up among the school clerks in whose hands these balances were to loan them for their own advantage. This would naturally make them more indisposed to spend the funds on hand, and it followed that the

¹ This act was passed Apr. 24, 1889 (ch. 555, laws of 1889, p. 677). It revises and extends the act of Apr. 10, 1873.

² In 1891 Gov. Reynolds, in his message, reports the balance then on hand as \$79,737.76. In June, 1892, the surplus reported as being in the hands of the clerks in the school districts was given by the governor as: New Castle County, \$23,643.41; Kent County, \$10,952.79; Sussex County, \$16,837.26; total, \$51,433.46. The reduction from the figures of 1891 is presumably due mainly to free textbooks, for which \$22,985.18 was spent during the year 1891-92.

district with the largest surplus sometimes had the poorest buildings and furniture. There was complaint also that salaries were very low, and the surplus was pointed to as one of the causes thereof.

The difficulty seems to have been met by the act of 1893, for in 1895 all moneys received from the State were "payable to the party entitled by orders or drafts upon the State treasurer"¹ and no longer passed through the hands of the local school clerks.

Another cause of complaint and a hindrance to progress was, as the president of the State board points out, the absence of a normal training school—one empowered to grant diplomas. Says the president:

Our sister States are * * * leading us in this matter. * * * Many of our brightest young men and women drift to the State normal schools of other States for their training, * * * most of these teachers remain in other States after receiving their training, and teach where their diplomas are recognized as valid without further examination.

This need was felt as strongly by the governors. In 1887 Gov. Stockley recommended the establishment of such a school and in 1895 Gov. Reynolds, after demanding more efficient teaching, thought "a reasonable amount of instruction in school organization, school government, and the art of teaching" should be added to the requirements, and in order to furnish this recommended a training school for teachers. In 1897 Gov. Watson recommended more funds for teachers' institutes.

It was pointed out that while the hostility to the system experienced in earlier days had now disappeared, there was still in some places a lack of interest on the part of teachers and school commissioners and a disposition to leave the matter in the hands of the teacher, who was frequently neither guided nor upheld by the local authorities. There is much sameness in the reports from year to year, as is to be expected, but the general direction was upward and Gov. Reynolds said in 1895 that "great progress" had been made in the last four years.

One law of the period met with universal commendation. This was the act of 1891 providing free textbooks for all pupils. State uniformity had been secured and before 1887 books had been sold at cost, but between 1887 and 1891 the State held aloof from supplying textbooks. Popular demand, in addition to gubernatorial recommendation, brought a new law in 1891 and the increased surplus furnished the means.

¹ Governor's message, 1895. See ch. 602, laws of 1893.

The first cost for the year ending August, 1892, was:

New Castle County.....	\$6,349.58
Kent County.....	6,378.88
Sussex County.....	10,256.72
Total for first year.....	22,985.18

This law produced the "most gratifying results." It removed many obstacles and made for improvement by helping to better attendance and better grading as well as a considerable reduction in expense.

All of this progress was "encouraging, but not satisfying," nor was it uniform. Some schools had fine houses and excellent furniture, while others were kept in houses that were not worth \$10; and the institutes were cramped and injured for lack of money. Gov. Reynolds complained in 1893 that the progress of the negro children was not "commensurate with the advantages offered," but added that this failure was due in part at least to "crude and imperfect" laws. One superintendent boldly declared that the incorporated districts were harmful because they lowered the standard, since their teachers were not subject to examination by the county superintendent, and in 1897 Gov. Watson recommended the repeal of these special charters of incorporation, for the schools so favored had not kept pace with others.¹

The State report for 1889-90, while pointing to progress, declared the system had by no means attained to a position where it might rest satisfied with its attainments:

There has been a steady improvement during the last two years in the general condition of the free schools of the State, but neither the State school system nor the administration of it has reached anything yet like perfection. The district system is necessarily weak. The adoption of what in other States is known as the township system, and what might here be properly called the hundred system, would greatly simplify our present school machinery and * * * greatly increase the efficiency of the schools.²

Of the county superintendents the president says:

The county superintendency has now had a four years' trial in Delaware and the work of the superintendents has, in the main, been of such a satisfactory character that it would be unwise to think of adopting any other system. Indeed, if any change is needed for the better, it is that of still closer supervision. This is especially true in the county of Sussex, where the schools are most numerous and the school term shortest.

To increase the efficiency of the county superintendents it was suggested that the term of service be increased from one to two or from one to four years; that qualifications as to scholarship and successful experience in teaching be fixed by law, and that the salary

¹ Wilmington was excepted from this proposed law.

² Report for 1889-90, p. 6

be increased. The county institutes "have been doing good work," says the president of the board, and two recommendations of the governor are worthy of notice. In 1895 Gov. Reynolds proposed that advanced pupils be given the advantages of the town high schools and that "these central high schools should receive a reasonable compensation out of the general school fund to defray the additional expense of the pupils thus admitted." By this arrangement it was expected to relieve the pressure of congestion in the lower schools and at the same time make the town schools the centers of higher instruction. In 1897 Gov. Watson points out that certain schools had not extended their term as long as the funds received from the State would justify, and therefore recommends that the aid given by the State be made to depend on the length of the school term, inaugurating a per diem distribution.

Some efforts, not very successful, had been made to collect statistics. It was found in 1891-92 that approximately the school population 6 to 21 was, white, 33,589; colored, 5,542; that 80 per cent of the white and 84 per cent of the colored was enrolled; 51 per cent of the white were in daily attendance for 8½ months, and 51½ per cent of the colored for 5½ months, including the city of Wilmington. It was reported that the State then had \$56,000 of surplus school money and that the new license law would be likely to add \$50,000 a year to this fund.

The president of the State board points out the difficulties in the matter of reports:

There has been some difficulty in gathering and arranging statistics under the operations of the new law. This is due partly to the meager requirements of the law and partly to the fact that the incorporated boards are under no legal obligation to furnish any statistics to the county superintendents. It would be well if the provisions of the law could be made general, so that there might be a uniform method of gathering statistics, comparing facts, and reaching results. The statistics here given are the best that can be offered considering the difficulties under which they have been gathered.

The report for 1887-88 represents the high-water mark for that period. The next one repeats and emphasizes its suggestions, often in the very same language. The third (1891-92) marks the ebbing of the tide, for in 1891 the composition of the State board of education was changed. The president of Delaware college, a professional educator, then ceased to be president of that board and the governor of the State was put in his place. The first biennial report after this change in the law was that for 1891-92 and the disastrous effects of the law appear at once. The general summary and review, the attempt at correlation made by the former president of the board now disappear, for the governor, who now signed as the ex officio president of the State board of education, contented himself with a half-page letter of transmittal. He refers to his message to the as-

sembly in 1891, for the reforms recommended by him and transmits without further comment the reports of the county superintendents.

The statistics for the period—those dealing with the school fund, its increase and its expenditures—are to be had from the reports of the State treasurer and State auditor, but neither of those documents analyzes or even reports in particular such funds as were local in both origin and destination. It is impossible, therefore, to learn from any available printed reports how much was raised in the counties by contribution and how much by taxation. We must content ourselves with the general statements contained in the auditor's reports. But we have evidence that the amount then raised by taxes was in general much larger, in many cases several times larger, than the legal requirements. The statistics given at the end of this study, Table 3, are all that are available on the phases considered. They give us the enrollment, but not the average attendance; they do not differentiate between whites and blacks. They are printed as they are given.

Value of school grounds, buildings, and furniture.

1891:		
	New Castle (including Wilmington, \$523,000)	\$853, 744
	Kent.....	115, 852
	Sussex.....	80, 996
		<hr/> 850, 592
1894:		
	New Castle (including Wilmington, \$630,000)	786, 352
	Kent.....	
	Sussex.....	.
1895:		
	New Castle (including Wilmington, \$693,917)	836, 637
	Kent.....	155, 798
	Sussex.....	114, 725
		<hr/> 1, 107, 160
1896:		
	New Castle (including Wilmington, \$702,937).....	839, 942
	Kent.....	130, 395
	Sussex.....	109, 821
		<hr/> 1, 080, 158
1897:		
	New Castle (including Wilmington, \$702,937).....	848, 447
	Kent.....	128, 700
	Sussex.....	115, 020
		<hr/> 1, 092, 167
1898:		
	New Castle (including Wilmington, \$675,505).....	800, 785
	Kent.....	129, 385
	Sussex.....	100, 906
		<hr/> 1, 031, 076

Chapter VII.

THE STATE SYSTEM: REORGANIZATION AND DEVELOPMENT, 1898-1913.

The decade treated in the last chapter is one of increasing dissatisfaction and growing realization of the deficiencies of the school system then in use. The period of self-satisfied content was gone; the thinking men in the State were now beginning to realize the shortcomings of their system and to demand something better. Matters could hardly be worse. There was a State board of education with little or no supervisory power. There were three county superintendents and one city superintendent, practically equal in authority. Each of these four administered what were to a large extent two parallel and rival systems, one for whites and the other for blacks. There were practically no coordinating forces above them, and nowhere does this lack of coordinating authority make itself more keenly felt than in the reports, statistical and other, which were printed from time to time. In these there is so little uniformity when one is compared with another or year with year that it is almost impossible from a study of the same to reach any conclusion except that of confusion worse confounded. The system was without system. Some schools had more money than they could use; some had fine houses and good furniture; some had good teachers, kept them, and paid them a fair wage. In other districts the schoolhouses were disreputable, the salaries disgracefully low. The percentage of the school population enrolled seems to have been a fair one as enrollment goes in the States, but the figures of attendance are too imperfect for even a guess at its relative proportion. A majority of the districts levied and raised by taxation much more money than the letter of the law demanded. The law would order that \$25 be raised by taxation; the district would raise \$100 or more; in some cases it was 5 times as much, in others 10 times, and in at least one instance more than 100 times as much.¹ These figures demonstrate that hostility to the school tax had practically disappeared.

Then, if there was little hostility, if there was a willingness to be taxed and a resultant sufficiency of money, why did the schools show such relative inefficiency and failure? The answer seems to lie in the one word which has characterized these schools from the day of

¹ See reports of New Castle County and school district in auditor's report for 1897 (Appendix V), p. 3.

their inception in the act of 1829, and has followed them with its debilitating influence from that day to this—decentralization. There was too much freedom; every county superintendent was a law unto himself; in matters of finance every school committee was a law unto itself. There was insufficient supervision and therefore little opportunity to locate and remedy weaknesses. As a result the schools showed all degrees from high-grade success to wretched failure. But so strong had this spirit of local school administration and local government always been in the State that it was difficult for its citizens to recognize the proper diagnosis. Their ability to do this was perhaps advanced by the educational clause in the new constitution, which was adopted June 4, 1897.

Prior to this time the people of Delaware had been living contentedly under the organic instrument adopted in 1831. But that date was before the rise of the modern public school, and as a consequence the constitution of 1831 not only had none of the spirit of the new renaissance which made the public school possible, but was itself an inheritance without change in form or spirit from the constitution of 1792. In 1792 it was still sufficient for the organic law to declare that the legislature should provide "for establishing schools and promoting arts and sciences." And in 1831, since the legislature had made but a few feeble efforts to obey this particular injunction, its solemn repetition as a part of the new instrument of government was still thought to be sufficient for a free, independent, and self-governing people.

But by 1897 the viewpoint of 1792 and 1831 had been outgrown and the constitution of the latter date drew the broad outlines of a modern system:

The general assembly shall provide for the establishment and maintenance of a general and efficient system of free public schools, and may require by law that every child, not physically or mentally disabled, shall attend the public school, unless educated by other means.

The constitution assigns the income of the public-school fund to the support of the schools and forbids its use for any other purpose; it directs the annual payment of not less than \$100,000 out of State funds for their benefit and provides that these sums should be used for the payment of teachers' salaries and the furnishing of free textbooks only; there was to be no distinction on account of race or color in the apportionment, but separate schools for white and colored children were to be maintained; no portion of any fund raised by taxation for education might be used for any sectarian, church, or denominational school, but "all real or personal property used for school purposes, where the tuition is free, shall be exempt from taxation and assessment for public purposes."¹

With the new constitution in working order and with growing discontent at the manifest failure of the old school systems, a thorough and radical revision of the school law was evidently necessary. This revision was enacted at the adjourned session of 1898 and was approved May 12, 1898.

I. THE REVISED SCHOOL LAW OF 1898.

The act of May 12, 1898, was the most elaborate school law which had ever been enacted in the State.

The general supervision and control of the free public schools of the State was vested in the hands of a State board of education consisting of the governor, as president, the secretary of state, the president of Delaware College, the State auditor, as secretary, and the senior member of the county school commissions as created by this act. These were all ex officio members and received no salary, but, excluding the governor, the secretary of state, and the auditor, they might receive by way of expenses up to \$30 per year. This State board was to meet quarterly; it was to compile one set of examination papers for white teachers and another for the colored, and in case of graded-school teachers the examinations were to be graded to suit the various grades of work offered. The State board was to adopt textbooks and hear appeals from the county school commissions. When appeals came up from the free colored schools the president of the State College for Colored Students was to sit as a member of the board in place of the president of Delaware College, but at no other time.

The free public schools in the counties, both black and white, were under the general supervision and control of the State board, while their particular supervision was vested in a county school commission for each county. This commission was composed of three members, not more than two of them from the same political party; they were to be appointed by the governor for a three-year term. They were to hold quarterly meetings and their duty was to investigate the school system in the county, the method of instruction and discipline, the way the school officers performed their duties, and the condition of school property. They had authority to visit the schools, including the incorporated schools, examine the papers and reports of the county superintendent, who was their executive officer, receive complaints, and act as a sanitary commission over all school property. They received no salary, but might be paid up to \$100 each per year for actual services and expenses. It was made an immediate duty with these commissioners to divide the counties into districts for colored schools, but the number of such districts was not to exceed the number of colored schools in existence at that time.

It was provided that property might be transferred from one district to another by petition; school districts might unite and all school districts in existence at the passage of the law were continued as such; women were admitted to the ballot in school elections on the same terms as men, but whites did not vote in elections in colored districts, nor colored in white districts, and the amount to be raised by taxation was still decided by ballot in the district.

The supervision and control of the free public schools in each district was vested in general in the State board and the county school commission and in particular in a district school commission composed of a clerk and two commissioners, who were elected for three years. They had immediate charge of the school. They selected the site, built the schoolhouse, provided furniture and fuel, employed and dismissed teachers, visited the school, kept it open for 140 days in the year or longer, collected the money raised by the district and expended the same, administered the free textbooks act, made settlements with the auditor, and saw that the detailed requirements of the State law were met. They received \$1 per day for actual service.

It was provided that certain incorporated schools should receive into their upper classes the more advanced pupils from other districts, and it was the duty of the white district school commissioners to make assessment lists for their districts. These lists consisted of the rates of the white males over 21 and the rates—

of the personal property of all the white inhabitants of the district; of the rates of all the assessable personal property within the district owned by any association or corporation; and of the clear rental value of all the assessable real estate within the district owned by white persons, associations, or corporations.

The property of colored citizens was listed by their school commissioners in the same way. Every white school district in New Castle and Kent was required to raise \$100; every district in Sussex, \$60. The requirement placed on the colored districts in this regard was just one-half of the above.

The general superintendence of all the free public schools of the county was vested in a county superintendent of schools. He was to be appointed by the governor for two years and received a salary of \$1,000 per year. It was stipulated he should be of good moral character and mentally and morally capable of performing his duties. He must have had 20 months' experience as a teacher and be a graduate of a reputable college or normal school. His duties were to visit, advise, and assist the teachers, create interest in the schools, prepare examination papers for the State board, conduct examination of teachers, countersign certificates, suspend or withdraw them when necessary, and hold teachers' institutes. For these institutes \$150 per year in each county was now provided, as was \$150 for the Delaware Colored Institute, located in Kent County.

The teachers passed three examinations according to the certificate desired: I. Orthography, reading, writing, mental and written arithmetic, geography, physiology and hygiene, with special reference to alcoholic stimulants and narcotics, history of the United States, Federal and State Constitutions, pedagogy, and English grammar; II. Algebra, geometry, physics, natural philosophy, and elements of rhetoric; III. "Such other branches and subjects as the State board of education shall direct to be included in such examinations."

The successful passing of these examinations with a grade of 90 per cent for I and 75 per cent for II and III was rewarded by a professional certificate, good for 10 years; the successful passing of I and III with the same grades won a first-grade certificate, good for 5 years; while a grade of 75 per cent in I and III secured a second-grade certificate, good for 2 years. It will be noticed that this law did not seek so much to extend the requirements for teachers as to change the valuation of the examinations passed.

It was provided further that, in distributing the share of money due to each county among its districts, there should be no discrimination between the districts for whites and blacks. The State treasurer was by this act constituted as trustee of the school fund. It was his duty to place the funds due each district in the Farmers' Bank for that county, and it was paid out by him by check only, and any balances on hand were deducted from the appropriations for the next year. In this way the accumulating balances disappeared and the school clerks no longer had the temptation to save funds in order to loan on private account.

Such was the school law passed in 1898. It was evidently a great improvement on earlier attempts at legislation. Under it there was evident effort toward a closely coordinated State system; at the top was a State board, made up of State officials and the senior members of the county school commissioners. These county school commissioners as such were the agents of and reported to the State board. Their authority bore the same relations to the county that the State board bore to the State. Within the county the county superintendent was their agent and executive, and in his turn he supervised and directed the local district school commissioners, who came in direct contact with the schools, supervised and directed them, and were directly responsible for their success or failure. This law, much more certainly than any earlier law, laid the foundation for a real State system.

The remainder of this chapter will be devoted to showing how these plans were worked out in action, and what additional legislation supplementary to that end was enacted during the following decade.

II. DEVELOPMENT AND LEGISLATION, 1898-1913.

Information on the actual workings of the school system under the law of 1898 comes mainly from the few and irregular reports of the State board of education, 1898, 1899-1900, 1901-2, 1903-4, and 1910. While these are the main sources, they are both incomplete and unsatisfactory.

The new State board was organized under the law of May 12, 1898, on June 25, 1898. It started in well and struck in its opening sentences at the very foundations of the troubles before it:

Owing to the fact that the present board differs so widely from all preceding boards, both in its constitution and its powers, in conjunction with the extreme scantiness of material and data on school matters left by such former boards, it was deemed expedient that the present board should make an entirely new beginning in school work for the State. * * *

The board is convinced that its first and most important duty is the compilation of reliable facts and figures showing the present condition of our schools as a whole. * * *

The board finds an utter absence of reliable statistics throwing light upon the simplest facts concerning our schools. For example, there is no certain information as to the percentage of illiteracy among either the citizens of this State or the children of school age, nor whether such percentage is on the increase or decrease; nor, further, as to the percentage of children not taking advantage of the free education offered by this State.

In accord with this purpose the board compiled and sent out blanks asking for information in regard to education and grouping it under certain headings. They collected a great mass of statistics of every kind, arranged and correlated it under proper headings, and printed it as a part of their report for 1899-1900. In that report statistics occupy 192 pages and make a statistical display such as had never been attempted before in the State. It seems to have been the purpose of the board to make such a presentation once in 10 years. They were gathered again and presented in the report for 1910, but in that case, although more complete than in the earlier report, they are not totaled, and are therefore of limited value.

The State board in its report for 1898 discussed further its plans and purposes. These included a gradual elevation of the standard of qualifications for teachers:

Delaware still suffers the great hardship of having no State normal school to qualify and test the capabilities of the instructors of her children. In most instances, therefore, school commissioners are compelled to rely entirely upon the teachers' certificate obtained on examination (never an entirely satisfactory test) by the county superintendent. For this reason the board has, through one of its committees, carefully examined all the questions given by the three superintendents in every examination of teachers held since the passage of the present school law, and made such changes in and additions to those questions as to it seemed proper. It has, moreover, added botany and drawing to the list of subjects upon which teachers must be examined.

There was complaint also by the board on the textbooks used. These were furnished by the State but—

nevertheless when the board began its labors under the law, it found the State list remarkable for its inclusion of a great number of the poorest, out-of-date schoolbooks, and for its exclusion of very many of the best and latest publications.

The board provided for the revisal and consolidation of the school law into a single whole, thus making it more simple and easy of access; and recommended amendments only in matters of minor detail, while the county boards reported that in accord with the directions of the law their first work after organization had looked toward the proper reorganization of the colored schools. This had now been done, and there were reported 25 districts for Negro schools in New Castle County, 32 in Kent, and 33 in Sussex, making 90 in all. The crying need of the Negroes was still for schoolhouses. Few were owned; churches, halls, and private houses were occupied by courtesy; furniture was poor or lacking altogether and in some cases the only desks available were those improvised out of benches by requiring the children to sit on the floor. The extreme inequality in the distribution of the colored population was also a serious drawback, and the lack of uniformity in advancement and progress was so marked among whites as well as blacks that the superintendent of Kent County was led to exclaim: "It is almost literally true, therefore, that even with the free public schools of this State the education of the child is dependent upon the accident of birth."

The most important school legislation in 1899 was that which sought to advance the grading of schools. It appears that grading of schools, without particular sanction of law, had now advanced to such a point as to be formally recognized. An act passed March 9, 1899,¹ directed the State board to select certain graded schools in the various communities and make them the centers to which children without graded-school facilities might repair from all districts in the county or from such particular districts as should be designated by the board. The graded schools accorded this privilege of admitting outsiders were to be certified by the State board and were to receive from the State \$15 per term for each pupil up to 150 pupils per county.

In this way the State provided advanced primary and high-school instruction for at least 450 pupils; it encouraged the development into high schools of the institutions that were already graded and opened the way for others to advance in the same direction. In putting this act into execution the State board selected 11 schools in New Castle, 19 in Kent, and 11 in Sussex as such graded schools, assigned the rural districts to them and carried out the law without friction. During the first year 67 pupils were thus admitted in New Castle County at a total cost to the State of \$817.87, which was

¹ Laws of Delaware, 1899, ch. 219.

something less than the cost provided by the State. In the same year 54 were admitted to the schools in Kent at a cost of \$668.76 and 46 in Sussex at a cost of \$559.31. The next year (1900) the admissions were 67, 53, and 31, respectively.

The system soon became popular and within the next few years the admissions into the graded schools were actually greater than the 150 provided for by law. By an amendment in 1909¹ the number to be admitted was increased from 150 to 250 per county and the compensation was fixed at 20 cents per day for not less than 140 days, instead of the \$15 per term of the old law. This provision for encouraging pupils to extend their courses and schools to grade their work was a wise one, for it relieved the congestion in the lower ungraded schools, encouraged the grading of the larger ones, and laid the foundations for the transportation of pupils and the accompanying compulsory attendance. Delaware was beginning to awake to modern life and methods.

At this time also a beginning was made in providing traveling libraries. A committee of the State Federation of Women's Clubs took the matter in hand and were given \$100 per year for advancing the circulation of such libraries among the public schools.² This was followed in 1901 by the establishment of the Delaware State library commission, whose powers were enlarged in 1903.³

For the first two years the new State board was occupied mainly in collecting the statistics which it published in its report for 1899-1900; in the selection and adoption of better textbooks and in organizing and systematizing the work of the public schools. In doing this it found that there was a great need of more money and of "a more just and equitable distribution" of the school funds. In his message in 1899 Gov. Tunnell points out the need for more money and that enough should be raised by local taxation to run the schools for eight months in the year. He then continues:

Owing to the increased number of colored schools and the equal distribution of the school fund among them, each district's share is less this year than last, but when it is considered that the State is still paying more than three-fourths of the expenses of the schools,

it is not to be expected that the districts would raise money locally unless required by law and it was reported that some districts actually expended only \$25 of the amount raised by taxation.⁴

Gov. Tunnel said in 1899 that the new school law, "with its many new and modern provisions, seems to be well adapted to our needs." But in 1901 he was also forced to say that—

Ignorance, selfishness, and a lack of appreciation of the great benefits derived from higher education have retarded its progress and crippled its usefulness.

¹ Laws of Delaware, 1909, ch. 86.

² Laws of Delaware, 1899, ch. 220.

³ See its reports in S. J., 1903, p. 206.

⁴ House Journal, 1899, p. 307.

The people lacked enthusiasm; they had not done their duty, and had not raised by taxation a sum commensurate with the State contribution.

Nor was the method of distribution satisfactory. The funds were still distributed among the counties "according to their white population as ascertained by the census of 1830." The school income at the time (1900) was \$134,396.50, of which \$100,000 came as a lump sum appropriation from the State and \$34,396.50 represented the income of the invested school fund. As divided that year, New Castle, including Wilmington, received \$50,345.44, Kent \$33,693.96, and Sussex \$47,954.05. In New Castle \$150 was given "to each and every single district and to each district contained in every united, consolidated, and incorporated district." The remainder was then distributed among the districts according to the number of children enrolled. In Kent and Sussex the distribution was different. The fund was first divided into as many parts as there were districts (including those embraced in consolidated, united, or incorporated districts). To each single district one part was given, but the amount set apart for the districts embraced in consolidated, united, or incorporated districts was united and then distributed among the consolidated, united, or incorporated schools according to the number of children enrolled. Then, too, certain schools, by authority of the legislature, were allowed to receive more than their just share, being given a single district's share for each district embraced in that school.¹

The result was that some districts with a given school enrollment got twice as much money for schools as other districts with substantially the same enrollment. It was this indefensible favoritism that the law of 1901 undertook to correct. It sought first of all to provide for a more equable division of the proceeds of the school fund.² It required an annual settlement by each school district with the State auditor and a detailed report of the same. It then provided that the income of the State school fund and the money appropriated by the State for the free public schools and increased by this act from \$120,000 to \$132,000 per year³ should be divided among the school districts, "including consolidated, united, and incorporated districts or schools," according to the number of teachers employed for at least 140 days during the previous school year. To be entitled to receive a share of this apportionment the district—

shall have raised by taxation or subscription for school purposes during the previous school year, if a white school district, at least \$100 for each teacher employed, and, if a colored school district at least \$50 for each teacher employed.

¹ Report for 1899-1900, pp. 4-6.

² Laws of Delaware, 1901, ch. 112.

³ See also Laws of Delaware, 1903 ch. 339.

If an assessment had been made for additional teachers, they were to be counted as employed, while payment for textbooks and balances on hand were to be deducted, and proportionate deductions were to be made for all teachers employed less than 140 days.

The annual report of the board for 1901-2 reviews the results of this law and pronounces it "a decided improvement on all former plans." There were then employed in New Castle County 240 white and 29 colored teachers; in Kent, 148 and 34; in Sussex, 235 and 35, making 623 white and 98 colored teachers, or a grand total of 721, including Wilmington, and the dividend for each teacher in 1902 was \$232.20.

The board said at that time:

There are still defects in our system that must be remedied. The isolated, ungraded school is the chief defect. It is getting more and more difficult to obtain and retain the services of competent and enthusiastic teachers for these ungraded schools. * * * We believe that the system of rural graded schools would in a great measure eliminate this defect. The idea is that of centralization.

This was the beginning of the movement which a little later eventuated in the consolidation of country schools, the transportation of pupils to school at public expense and their companion piece—compulsory school attendance.

In 1901 the sum of \$6,000 annually for two years was provided by the State for building and repairing schoolhouses for the colored schools. The money was to be expended under direction of the county school commission and was of the greatest service. Other sums have been provided from time to time since that date.¹

The necessity for and importance of normal training was again emphasized, and it was recommended that superintendents should have "power to grant certificates to teach in the county to persons holding certificates of graduation from normal schools, good in other States, or holding diplomas from a respectable college." But since it was thought the cost of a normal school was too great for the State to incur, it was proposed that the State provide funds by the use of which pupils might attend normal schools in other States.

In 1903 this idea was enacted into law. It was provided that State funds, not to exceed \$1,000 per county per annum,² might be expended under the direction of the county school commissioners to assist in meeting the expenses of normal school pupils in unnamed normal schools in other States. The assistance rendered was not to exceed \$2³ per week and the beneficiaries of the fund for their part

¹ Laws of Delaware, 1901, ch. 115. See also laws of 1903, ch. 342, where the act of 1901 is reenacted; ch. 351, which authorizes a colored district in Kent and another in Sussex to borrow up to \$600 each for furnishing and repairing their schoolhouses. In 1909, \$1,000 was granted for the colored school buildings of Sussex (ch. 90) and in 1911 \$2,500 per year for two years for building and repairs throughout the State; in 1913, \$2,000 annually for two years (ch. 108); in 1915, \$1,750 annually for two years.

² Raised in 1911 to \$1,500.

³ Raised to \$2.50 per week in 1911.

were to enter into obligations to teach in the schools of the State.¹ By an act of 1905 (ch. 90) they might be chosen from any part of the State, but in 1915 the whole system was abandoned,² a normal department having been established in Delaware College.

In the report for 1903 and 1904 the State board turned all of its eloquence toward the solution of a single question:

The great bane of our schools and the greatest handicap on their efficiency is irregular attendance. In some districts of our State and that often, too, in the districts [where] by reason of poverty-stricken conditions, the public school is the sole hope for social betterment by the children, the monthly attendance will not be one-fifth of what it should be. The State money is practically wasted in trying to maintain an efficient school under such conditions.

The solution of the problem lay in the enactment of compulsory-attendance laws and in the consolidation of schools and the transportation of children to school at public expense. The arguments for consolidation and transportation are given at length, backed up by many quotations from the experience of other States. The argument had no immediate effect apparently. No consolidation and transportation law was passed at that time, but in 1907 came the first compulsory-attendance law.³ This subject had never been much discussed in the State; Groves was against it in the eighties; Raub was against it in the nineties, and little had been said in its favor, but its time had now come. It was provided that children between 7 and 14 should attend "a day school, in which the common English branches are taught," at least five months each year, but it was permissible under certain conditions to reduce this to three and the law was not to apply to pupils who lived more than 2 miles from the schoolhouse unless free conveyance was provided. Violation of the act was treated as a misdemeanor subject to fine or imprisonment. Attendance officers were provided and special schools might be established for habitual truants. The boys might be sent to the Ferris Industrial School, and incorrigible girls might be sentenced for a definite time to the Delaware Industrial School for Girls. The State treasurer was instructed to withhold one-fourth of the State dividend due to any district that neglected or refused to enforce the act.⁴

¹ Laws of Delaware, 1903, ch. 341. The length of teaching service demanded was fixed at 2 years in 1911.

² See ch. 163, laws of 1915, which repeals the whole section of the code (ch. 71, sec. 29) providing for these pupils in extra-State normal schools.

³ Unimportant amendments made in 1909, ch. 88.

⁴ Laws of Delaware, 1907, ch. 121, and *ibid.*, 1909, ch. 88. The Delaware Industrial School for Girls was incorporated by ch. 637, laws of 1893. It was a reform school for girls up to 21 years of age, who were to be committed by proper legal authority. It was granted \$1,000 by the State (increased in 1897 to \$1,500, ch. 449). See also ch. 363, laws of 1903, and chs. 126 and 127, laws of 1913. It now receives from the public 40 cents per day for each person in the school. The Ferris Industrial School for Boys receives support at the same rate, with a minimum payment of not less than \$1,000 per month. See the Code of 1915. The Ferris School was incorporated by act of Mar. 10, 1885. See also acts of Mar. 14 and 27, 1905, and Feb. 25, 1907.

Another act of 1907 provided the machinery by which school districts might vote on the question of borrowing money for building, repairing, and furnishing schoolhouses. On petition the question was to be decided in an election where every person who had a right to vote in a regular school election and every woman freeholder might "cast one vote for every dollar and fractional part of a dollar of school tax assessed for the year in which such election is held against him or her respectively."¹

This law took the power of decision out of the hands of the propertyless class and gave it to those who paid the tax. It was, therefore, more favorable to the schools than if left to manhood suffrage.

The efforts to secure free libraries in the State were at first less successful than those looking to other phases of the problem. These began in 1901 (ch. 136) with the enactment of the first law. It proved unsatisfactory and was largely amended in 1903, while other amendments followed in 1905 (ch. 114). The lawmakers took a rest in 1907 and in 1909 the law was perfected (ch. 106).

By this act a State library commission was established. It was composed of nine persons appointed by the governor for five years. The State librarian was its secretary ex officio, but had no vote, and the members received no salary. The commission was given general supervision over all libraries in the State established under the act and over all circulating libraries. All the school districts in the State, single, united, consolidated, and incorporated were classified according to the amount of taxation for school expenses that each might levy. The classes were seven in number, including a few arbitrary assignments to particular classes:

Class 1 was made up of those districts which raised \$6,000 or more for school expenses. They might levy and raise for the use of libraries from \$500 to \$1,000;

Class 2, \$4,000 to \$6,000; might raise \$150 to \$400;

Class 3, \$2,000 to \$4,000; might raise \$100 to \$300;

Class 4, \$1,000 to \$2,000; might raise \$75 to \$200;

Class 5, \$500 to \$1,000; might raise \$50 to \$150;

Class 6, \$200 to \$500; might raise \$40 to \$100;

Class 7, less than \$200; might raise \$25 to \$75.

The districts might, when they so desired, vote on the question of establishing and maintaining a public library, and when so authorized were required to levy and collect the necessary tax according to the class to which they belonged. They were then to elect a school district library commission, which was to have control of the erection and equipment of the building and the administration of the library

¹ Laws of Delaware, 1907, ch. 122; *ibid.*, 1909, ch. 89.

and they might borrow money for the purchase, erection, or repair of a library building or for the purchase of books.¹

In 1913 the State fund for use of the commission, in addition to expenses and printing, was fixed at \$2,000 per year, and it was provided that whenever a school district should raise a certain amount of funds for library use by taxation the commission should contribute a fixed amount to the use of the library (ch. 116).

The first decade of the twentieth century was in Delaware pre-eminently the age of improvement in public schools. As we have seen, there was in the State much hasty and tentative legislation, laws were passed at one session only to be revised and amended beyond recognition at the next. These laws touched all phases of the educational problem, but had to do in the main with material and administrative rather than educational matters. Many acts allowed individual schools, including at least two schools for negroes,² to borrow money on the faith of the district to repair and improve old buildings or for the erection of new ones. In 1907 an act standardized the conditions under which the vote to decide on borrowing money might be taken.

But the work of the State board was not satisfactory, not even to itself. In its report for 1910—the only one published between 1904 and 1913—it is said:

As at present constituted, the State board of education is not a success in the administration of its duties; being an automatic body, the senior member of the county school commissioners is barely initiated in the work when he retires and is succeeded by another, and the evolution continues, and the board is deprived of the best services of its members.

As a result of this feeling, and in accord with the wishes of the State board, that board as then constituted was abolished in 1911 and a new board created. Under the law of 1911 (ch. 94) the general supervision and control of the free public schools of the State, including those for colored children, was vested in a State board of education of seven members, who were to hold office for a full term of seven years from April 1, 1911. They were to be appointed by the governor, and were to serve without pay. It was their business to systematize and harmonize the work in the free schools, to render the schools more useful and efficient, and to raise the standard of instruction and education. They might make and enforce the regulations necessary to attain these ends; they had power to prescribe and furnish textbooks; regulate the curricula; determine the conditions under which county superintendents were to issue certificates to teachers; regulate the sanitary equipment and inspection of school

¹ In April, 1916, a campaign was carried on in Wilmington to raise money for a new library building. Sums varying from a nickel to \$34,000 and amounting to \$325,000 were raised. The building will be the exclusive property of the library.—*Library Journal*, June, 1916, p. 426.

² See Laws of Delaware, 1903, ch. 351.

buildings; and take such other steps as seemed necessary "to promote the physical and moral welfare of the children of the free schools." The State board was required to investigate facts and conditions in regard to the needs of the schools and might require teachers and school officers to furnish needed information, and it might, if deemed necessary, employ "a trained educator or educational expert" to advise and assist in the performance of its duties. The board was to hear appeals and make reports to the governor. The State auditor was to be secretary to the board, but without vote or pay, and the board was to fix the conditions and regulations under which the county superintendents issued teacher's certificates.

In 1910 the State board pointed out the greatest weakness of the system as it then stood—local self-government and taxation on rental values, instead of on values:

Local self-government is recognized as the greatest evil of our present system, and until the administrative part of the schools is entrusted to other hands the improvement must be necessarily slow and not productive of any great good.

A system which, it is hoped, will be recommended to the incoming legislature will in a great measure do away with the criticism of insufficient school buildings, unequal taxation, unsuitable location of schoolhouses, unequal salaries of teachers, and give the taxpayer and children of the county more nearly equal privileges. After having inquired diligently into this phase of the question, we do not hesitate to say that because of the system now in vogue, especially in Sussex County, there are numerous instances of where the most valuable land does not pay a cent toward the support of the school in the district in which it is located, because of the fact that it is timbered and untenanted. Changing the basis of taxation from "rental value to real value" will rectify and remedy this injustice and tend more to equalize taxation than any one step that can be taken as far as we, in our judgment, can see.

The board declared further that "the great need of our schools" at the time was "more money and a more just and equitable distribution of the school funds." For the year 1909-10 the funds of State origin consisted of \$132,000 given by the State and \$29,809.55 coming from income from investments, which were divided among the counties as follows:

New Castle, including Wilmington.....	\$69,290
Kent.....	43,460
Sussex.....	60,885

Of these sums \$11,815.45 was reserved for the purchase of textbooks. The board remarked that—

great inequalities undeniably exist in the distribution of the State's aid to schools, but it seems next to impossible to evolve and develop a system in which there are no irregularities and inequalities.

The provision for the admission of pupils to the high schools had not been altogether satisfactory. It was at first provided that \$15 should be paid to school for each pupil admitted; later this sum was dropped and 20 cents per day for each day of actual attendance was

substituted, and "while this plan has cost the State a greatly increased amount, over the per capita system, a great many gross irregularities and inequalities have arisen which have caused the system to be in disrepute." It was then proposed to make payment to the high school in the same way that it was made to the districts, on the basis of the teachers employed. The schools were to be graded into four classes: Those of the first class to receive \$1,000; those of the second, \$750; the third, \$500; and the fourth, \$250.

The report of the board continues:

Taken as a whole there is a noticeable betterment in all things pertaining to schools, and especially with regard to the advancement of the grades and curriculum, and there is not much to choose from as between the schools of the several counties, as far as competency and proficiency is concerned. There are several high schools in the State (outside of the city of Wilmington) that have three and four teachers each, and there are several that will increase their quota before the beginning of the next school year.

A commercial course had been opened in one of the high schools, and courses were now offered in typewriting, bookkeeping, and telegraphy. A manual training-school for each county was recommended, and it was thought that outside of Wilmington the compulsory attendance law had increased the size of the schools by 25 per cent, and salaries were improving, for in 1910 (p. 9) it was reported from Sussex that while in 1901 but one teacher in the single districts received as much as \$40 per month, now out of 296 teachers 110 received from \$40 to \$50, and but 6 teachers in the single districts received as little as \$35, and everywhere school buildings were improving.

In 1911, besides the law reorganizing the State board, one act provided that a half hour per week be devoted to moral and humane teaching, instruction in "kindness, justice, humane treatment, and protection to birds and animals and of their important part in the economy of nature." Vivisection was forbidden,¹ and lectures on good health were delivered.²

It is evident that with the close of this period of Delaware public school educational history in 1913 progress was being made. Appropriations from the State were at the highest, the income of the school fund was larger, and the districts were more than ever disposed to levy taxes for the benefit of schools. The schoolhouses and school furniture were improving, schools were being graded, high schools were developing, and the work as a whole was better organized, but the schools were still ruled by a purely local self government. There was little or no authority exercised by the State, and the people

¹ Laws of Delaware, 1911, ch. 93.

² Report 1910, p. 6.

had not yet come to realize the weakness of decentralization, but they were going in that direction. They had not yet arrived at a fixed equilibrium in the matter of central control, the pendulum was still likely to swing back over its old route, but when we compare the situation in 1910 with what it was down to 1875 it will be realized what tremendous strides had been taken already toward the organization of a real State system.

Chapter VIII

THE REORGANIZED STATE BOARD OF EDUCATION AND ITS REPORT OF 1913; THE STATE SUPERIN- TENDENCY REESTABLISHED; THE MOST RECENT LEGISLATION.

The general assembly of 1911, after providing for the reorganization of the State board of education, outlined the phases of educational endeavor which it was desired the new board should seek to advance. First and foremost it was to make a report on the condition of the schools, together with a revision of the school law; the other two requirements were added by joint resolution: (1) To prepare and present to the next legislature a revised charter for Delaware College and (2) to evolve a feasible plan for the higher education of women in Delaware. The second and third of these duties concern us but indirectly, for the scope of the present study confines itself in the main to the evolution of the public school.

Gov. Pennewill approved the bill providing for the reorganization of the State board of education on March 14, 1911. In accord with the terms of that act he appointed as members of the new board Dr. George W. Twitmyer, of Wilmington, who became chairman; Henry Ridgely, of Dover; George S. Messersmith, of Lewes, who became secretary pro tem.; Prof. Harry Hayward, of Newark; Henry Clay Davis, of Laurel; John W. Hering, of Milford; and Frederick Brady, of Middletown. These gentlemen organized in Dover on May 2, 1911, and entered upon the duties of their office. Committees were appointed to consider the educational needs and problems of the State, among which were mentioned the grading of schools, improvement and sanitation of school buildings, unifying of courses, aid to normal students, and the examination and certification of teachers. The work which they have already accomplished has been such that it may be fairly characterized as epoch-making, while the report which they have issued as a result of their survey of the educational development, progress, and position of the State will entitle them to rank among the chief educational statesmen of the Commonwealth.

This report was published in 1913, and as it is addressed to the general assembly it may be taken as substantially the last official word

from the State on the subject of the public schools. The subjects discussed by the board include graded and rural schools; better supervision; the larger school unit, or the "representative district" plan versus the school district plan; the assessment and collection of taxes; the need of more money for the rural schools; State aid; the salaries of teachers; sanitation of schoolhouses and summer schools for teachers.

This was the first report of the new State board as reestablished and constituted by the act of March 14, 1911, and it is remarkable in that it boldly and frankly faces the educational conditions which it finds and reports them as they were without glossing or extenuation; no earlier report had ever presented the situation with such frankness, and it may be assumed that it gives a true picture of the situation in 1913; for this reason large extracts from the report are presented here.

I. THE REPORT OF THE STATE BOARD IN 1913.

One of the first duties of the board was to work out a new scheme for the examination of teachers. It was adopted and the first examinations held on April 6, 1912. The scheme provides that all teachers in the State shall be examined in the same subjects on the same day. The grade of the certificate issued is conditioned upon the nature and quality of the examination passed and the experience of the candidate. There is liberal provision for granting permanent certificates, and for validating normal school and college diplomas upon evidence of successful experience. All certificates are now valid in any county in the State when properly countersigned by the county superintendent. In connection with these examinations, and as preliminary to them, there has been outlined a course in professional reading for teachers.

The results of this readjustment have been to make examinations uniform throughout the State and to make certificates interchangeable between the counties. Examinations and certificates have now been reduced to a State basis.

The board reports that there has been "a marked increase in the quality of the work of the graded schools," and says that it is due to the unusual interest taken by the towns in their schools:

Perhaps at no time in the history of our State have the people of the urban communities known so much about the actual state of instruction and discipline and been more keen in their desire that the schools should adequately serve the community * * * there are few towns in which additions have not been built or improvements installed. * * * The instruction has increased in efficiency.

These improvements have been due to a more careful selection of teachers; among these teachers there have been more who are college or normal graduates; the supervision in the graded schools

has been closer; the amount of money raised by incorporated schools has increased and has been used in providing better salaries and increased facilities:

The increase in the efficiency of the graded schools is especially seen in the changed character of the high schools. Every town of over 1,000 people has a high school with a course of three or four years, and some of the smaller towns maintain creditable schools. The quality of the teaching in the high schools has improved materially in recent years and the courses are being strengthened and rationalized.

The condition of the graded schools was said to be satisfactory. They showed a healthy growth. What they then needed most was a "flexible, sensible, and modern course of study with a minimum requirement in every subject." This would help standardize the work of both the high and graded schools and make it easier for pupils to pass from one school to another in the State. For these reasons it was thought that the incorporated schools were not in need of legislation.

While the work in the graded schools was satisfactory and that of the incorporated school needed no legislation, such was not the case with the rural schools, for "those most familiar with the actual work of these schools know that they are deplorably inefficient in many respects." It was said that the blame for their condition was not to be laid on individuals nor on the executive school officials, for "under the existing conditions, as determined by our school laws, the most earnest official could accomplish little." The system under which they were operated was antiquated, the pay was poor, and bills proposed by the board in 1911 for their improvement were not enacted into law:

Leaving Wilmington out of consideration, the great majority of the pupils in our State attend rural ungraded schools. Measure after measure has been passed for the improvement of the graded schools, but the rural school has been allowed to remain under an antiquated system of administration and under what, to most people, appears an unjust system of taxation.

Some of the existing ill conditions which could not be changed under the law then in force were poor supervision; the small school unit; the compulsory assessment of real property at rental values and of personal property at real value; poor collections and large cost; separate school assessment in every single district; inexperienced teachers who have no supervision by commissioners; inequalities in taxation in adjoining districts; poor schoolhouses, bad sanitation; inadequate supplies in the matter of books and illustrative apparatus; no definitely outlined courses of study; poor home accommodations of teachers.

The first necessary step in the improvement of this unfortunate situation was thought to be through better supervision: (1) By provision for a State commissioner of education, who shall also be secre-

tary of the State board of education; (2) by the election of county superintendents by the State board of education instead of their appointment by the governor.

The board presents an extended and convincing argument in favor of these proposed reforms:

During the last two years the board has been hindered from time to time by the lack of definite actual facts concerning the schools of the State, and they have been compelled by extraordinary efforts to gather information which should have been provided for them by an officer under their direction. The members of the board are all men engaged actively in business or professional work, and though they serve without pay on the board, have held frequent meetings and have undertaken to perform, as far as possible, the duties ordinarily exercised by a paid commissioner of education.

Delaware is unique among the States in that it is the only one which does not have a commissioner of education or State superintendent of schools, who under the State board of education, is the chief educational executive in the State. Those who are most familiar with the school problem in our State have realized for a long time the necessity for an officer who could be held responsible for the full and complete execution of the school law. Until such an office is created by law the State can have no definite educational policy, no economy of administration, and no absolute and uniform enforcement of the law.

After the most careful consideration of all that is involved in this matter the board urgently recommends the creation of the office of State commissioner of education. This officer should be the secretary of the board and primarily its executive officer. He should formulate a definite educational policy for the State and be its authorized leader. He should be an experienced teacher, having broad scholarship and technical knowledge of educational processes and administrative methods; he should be an adept in school legislation and an easy, forceful speaker; he should be able to harmonize and vitalize all the educational forces and instrumentalities of the State. He would gather statistics and accurate information as to the condition of the schools as a whole and specific information as to the needs of different communities. As secretary of the board he would conduct its correspondence, which up to the present time has been done by individuals on the board at great personal sacrifice, and would as such perform such other duties in relation to the schools (except auditing school accounts) as are now performed by the State auditor. In conjunction with the county superintendents he would see to the closer supervision of the schools and to the enforcement of uniform standards in the schools of the three counties. He would maintain an office in which the school records of the State would be preserved and from which would be issued bulletins for the teachers, giving specific information and suggestions in modern methods of school administration. He would, above all, be responsible for the complete and uniform execution of the school law in the State.

It has long been felt that the office of county superintendent should be removed from politics. So long as this office is appointive by the governor it is only natural that political considerations should enter somewhat into the appointment; but there is a more important reason than this. An appointive officer will, for human reasons, not be as strict in his enforcement of law as he should be. He will be hampered in a measure in the performance of his duty by considerations of expediency. If he is elected by a board which will be cognizant of the fact that he has performed his duties wisely and well, he need have no fear that malcontents for the time being can have him removed from the position in which he is actually doing his proper duty.

It will be shown later how far this earnest appeal was successful in its demand upon the assembly.

In the next place the State board presented the arguments in favor of a larger school unit. The school districts outside of Wilmington then numbered: Unincorporated districts, 73 in New Castle, 81 in Kent, and 136 in Sussex; incorporated districts, 11 in New Castle, 17 in Kent, and 19 in Sussex; colored districts, 24 in New Castle, 31 in Kent, and 32 in Sussex. There were in all 47 incorporated districts.¹

The State board then continues:

The boards of education in incorporated districts have from 3 to 12 members and have from 3 to 16 teachers in their employ. These boards are generally made up of representative men in the community, who, in many instances, have children in the school. They hold monthly meetings, have more or less complete reports from the principals in charge of the schools, visit the schools at intervals, and on the whole are fairly well acquainted with the work of the individual teachers and the actual condition of their schools. An examination of the lists of directors of the incorporated schools will show that in most cases the communities show reasonable discrimination in the management of school affairs entrusted to them. The 47 incorporated districts may well be left alone to act under the charters they now hold.

A different situation prevails in the rural districts. There are 290 unincorporated districts in this State, each with a board of 3 commissioners, making a total of 870 commissioners. In 19 of these unincorporated districts 2 teachers are employed, so that in the rural schools there are practically three times as many commissioners as teachers. It is probable that this system was devised to interest more fully each community in its own school, but it has failed completely to accomplish this purpose. We will point out briefly the reasons why a larger unit should be established.

1. The three commissioners in each district hold practically only two meetings during the year—one at the time of the annual school election in June, and one to make the assessment. Once the school is started the commissioners hold no meetings, have no report from the teacher, and the clerk confines his activity to making out the monthly salary check.

A great many of the commissioners are substantial farmers and business men who really want a good school. A great many also are men whose only interest is that the school shall be kept open seven months, so that the State dividend may be secured. In a few instances do they visit the schools, and if they do, many are hardly in a position to judge the character of the work. The whole responsibility of the school devolves on the teacher, who has no assistance or supervision, except in the annual visit of the county superintendent. The result is that the school has no supervision, buildings and outhouses are neglected, and frequently the school sessions are cut short by uninterested teachers. The only argument in favor of a local board of commissioners for every school is that it would carefully look after the home school. The system has been tried in this State for years, and the evidence is conclusive that it absolutely fails to do this.

2. There are 290 separate school assessments in the single districts and 290 collectors. But this does not tend to accurate and close assessments and collection of taxes as might be supposed. The assessment lists in the majority of cases are very carelessly made out, a great deal of property is not assessed, and in some cases, though the instances are few now, no actual assessment is made. The only purpose seemingly is to raise enough money by taxation to secure the State dividend and to keep the school open seven months. A further and more flagrant wrong in this system is the unequal

¹ On this subject the governor said in his annual message in 1915 (H. J., 38): "Including the city of Wilmington, this State has 524 school districts. Fifty of these are town schools, which the law terms incorporated (they are practically consolidated). This leaves 474 rural schools, or one-teacher districts."

assessments made and the unequal amount of taxes levied. The making of 290 assessments by 290 different persons involves many unnecessary and unjust inequalities in the valuation of all kinds of property and the collection of the taxes by 290 different persons is uneconomic if not wasteful; the work might be accomplished by a much smaller number more effectively.

3. In many instances, the number of children in a district decreases until there are only from 3 to 12 pupils in the school. These pupils could easily be sent to near-by schools and not have to walk farther. Instead, the district, through a false local pride, will keep the school open, pay the teacher a smaller salary, and subject the pupils to the deadening routine of the usual small school. If the representative district is the unit of government, very small schools can be closed and pupils can be assigned to a near-by school at a great saving of money, and to the advantage of the district. When population shifts so that the school is again necessary, it can be reopened by the board in the representative district without any formality.

4. Under the present system, if two or more rural districts wish to consolidate, it requires a two-thirds vote in such districts before the consolidation can be effected. Under this provision of law, there have been very few instances of consolidation. Local prejudices will not allow it to be done even though the majority believe it to be best. Wherever graded schools have been established in town or country in this State, there is not on [an] instance where the people would wish to revert to the old system. The representative districts as the unit of government would merge the interests of all the people in the district, and the way would be open for consolidation whenever the people desire it. Until the representative district is made the unit of administration there can be no marked increase in the efficiency of the rural schools.

We therefore recommend strongly that the representative district be made the unit of school administration in the State, the present incorporated districts as they now exist to remain as they are.

It was thought that by the representative district plan the centralization of the schools would be forwarded. School affairs would be under the direction of 30 boards of education of 5 members each (10 boards in each county), instead of 290 boards of 3 members each. The boards would be composed of men more interested and capable than were now generally found on the local boards; they would hold monthly meetings, require monthly reports from the teachers, visit the schools more regularly, take better care of the school buildings and furniture; more economies could be introduced, and the schools could therefore have more money without increasing taxation; the new system could be put into execution without commotion or disturbance and would tend to approximate that of the incorporated districts, which were then the most successful phase of the school work in the State.

Of no less significance or importance was the discussion on "the present antiquated system of assessing and collecting school taxes." Here indeed was to be seen the perfection of decentralization:

In June of every year, the school voters in the 290 rural districts of the State meet at the schoolhouses and determine how much money shall be raised by taxation for the coming year.

After the school meeting, 290 boards of commissioners make the 290 separate assessments. The commissioners in the 290 districts then fix the rate which is usually different in each of the 290 districts. They then designate tax collectors, whose

commissions average about 8 per cent. The collectors turn over the tax, less their commission, to their respective boards of commissioners.

In making the assessment the law requires it shall cover the real property assessed at its rental value, personal property assessed at real value, and the rates of persons, or polls.

To remedy this situation the board recommended (1) that the local single districts be abolished and the representative district be made the basis of school government and taxation; (2) that the county assessment be made the basis of taxation on real property, and on personal property if so decided by the board. The county assessment had to be made for other purposes; it was more nearly accurate and generally covered all the assessable realty or personalty and the polls, and would do away with all separate assessments; (3) that the voters in the separate districts should determine whether real property be taxed at its real or its rental value and if at the rental value this was to be 10 per cent of the real value. Previous bills had made county assessment the basis of taxation, but made the assessment of real property at its real value obligatory, and on this rock all school legislation aiming to relieve the situation had been wrecked; (4) that the tax rate in each representative district be fixed by the board of commissioners and that the taxes be collected by the county tax collector or clerk of the school commissioners.

In the same manner the State board discussed the need for more money in the rural schools and showed that while in 1910 for 2,152 pupils the graded schools raised \$27,058.39, the rural schools raised only \$20,447.47 for 2,989 pupils, and that, while the average expenditure per child in the graded schools was \$12.57, in the rural schools it was only \$6.86. This was the proportion in New Castle County: in Kent only one-third as much was spent on the rural as on the town pupil; in Sussex it was a little more than one-half as much. In view of this situation the board asked if it was startling that the graded schools should have increased in efficiency while the rural schools had remained stationary?

It was shown further that in general the State was then paying "more than 50 per cent of the cost of maintaining the schools in the rural districts," and it was suggested that the need was not "so much for more aid from the State as for raising of more money in the rural districts." How this desirable object was to be obtained was not suggested.

The question of rural salaries is taken up in the same connection. In New Castle the highest rural salary was \$55, the lowest \$30, the average \$39.90; in Kent the highest was \$50, the lowest \$33½, the average \$38; in Sussex the highest was \$60, the lowest \$35, the average \$40.50. It was also noted that the smallest salary paid in Sussex was \$35 per month and in New Castle \$30. The per centum of

salaries in Sussex below \$40 was 24 per cent; in New Castle it was 33 per cent, and in Kent nearly 50 per cent.

In commenting on these figures the State board remarks:

It is not true, as one might suppose, that the poorer districts pay the lower salaries. In many cases, an actual examination of the auditor's report shows, it is the districts with a large assessed value of property which pay the small salaries. The low salaries are as a rule paid in the districts where the commissioners, having no interest except to keep the school open, bid for a cheap teacher, and they get one.

In their report the State board considers also the question of the sanitation of schoolhouses and their discussion is more forceful than pleasing. They neither try to conceal nor to glose over a discreditable situation. They say:

Under existing law the authority to enforce proper sanitary conditions in the schools is vested in the State board of health, in the county school commissions, and in the State board of education. This conflict of authority has made it impossible for any of these bodies to remedy serious conditions which exist at some of the schools.

In various reports of superintendents and county school commissions attention has been called to the poor [accommodations] at some schoolhouses, some of them hardly habitable. But of special importance is the condition of the outhouses at some of the schools. Notwithstanding frequent notices to improve conditions, there are schools still where the commissioners have failed to provide separate outhouses for the sexes and where the outhouses themselves are in an unmentionable condition. This is more than a sanitary problem, it is so bad at some places that it is a moral one and a scandal in the community.

The authority to oversee these matters should be vested in the State board of education, as the natural body. It will have the organization to enforce proper measures in the commissioner of education and in the county superintendents. The conditions can then be corrected without additional administration expenses.

The last subject pertaining to the public schools discussed in this remarkable report is that dealing with the training of teachers: "A larger and more efficient administration for the rural schools, more money for their maintenance and better teachers to work in them; these are the needs of our rural schools," says the report. Better teachers were needed, but "the State for a time must depend on its present body of teachers." The county superintendents had for some years conducted a summer school at Dover. It was suggested that this be discontinued and that \$1,200 be granted by the State to Delaware College for maintaining a summer session of not less than five weeks. This suggestion was accepted by the assembly of 1913 and the \$1,200 asked for was granted.¹ The summer school opened in 1915 and continued for six weeks. Elementary instruction in fundamental school subjects, including methods of teaching, is offered to teachers in the primary grades, and advanced instruction to teachers in the higher grades. Each course is in charge of a specialist who is also a skilled instructor. The faculty is drawn largely from that of Delaware College.

¹ Laws of Delaware, 1913, ch. 122.

- The sections of this report dealing with the new charter for Delaware College and that which discusses the college for the higher education of women are of direct interest in a study of the public schools. After consultation with various women's federations and organizations the board recommended that a college for women affiliated with Delaware College and located at Newark be provided at a cost of approximately \$125,000. Three courses for women students were proposed, one leading to A. B., one to B. S., and a four-year course in education for the training of teachers, also leading to the B. S. degree. The report continues:

It is intended that the course in education shall be flexible enough to meet the needs of the teachers of the State. In addition to the above courses, it is proposed to provide short courses open to women who are unable to meet the entrance requirements for the above-mentioned courses or who are unable to spend four years in pursuing a systematic course of study. The short courses will be adapted especially for those women who wish to prepare themselves for teachers or home makers.

It was suggested that the expense incurred might be met in part by devoting to this affiliated college the \$4,500 which under existing laws was appropriated annually to provide instruction for the young women of Delaware in the State normal schools of other States.¹

This suggestion of the State board was accepted by the assembly of 1913. It determined to establish an affiliated college for women in connection with Delaware College and created a commission to acquire a site and erect the necessary buildings; it authorized them to borrow on the faith and credit of the State, the sum of \$120,000 and provided \$30,000 a year for five years as a sinking fund.² The Woman's College was opened with the session of 1914-15. In 1915-16 it had 86 students in arts and sciences, education and home economics. It is supported by both State and Federal funds.

In further accord with the recommendations of this report the assembly of 1913 reincorporated Delaware College, and, as has just been told, not only provided an affiliated college "for the instruction and education" of women, but also instructed the trustees of the college to organize "a department of education which shall be a part of the public school system of the State, and which shall have for its object the education of teachers for the public schools of this State." The course of study was to be arranged in cooperation with the State board of education, and the courses of study of the high schools were to be adjusted by the State board and the trustees of the college "in so far as they are related to the terms of admission to Delaware College."³

¹ This suggestion was acted on in 1915 when the assembly repealed (ch. 168) the act by which aid was given in attending extra-State normal schools.

² Laws of Delaware, 1913, chs. 117, 124.

³ *Ibid.*, ch. 117. See also 1915, ch. 186, where the language of the act of 1913 is somewhat modified.

With the execution of the provisions of the acts looking toward the rehabilitation of Delaware College, the opening there of a summer school for teachers in 1913,¹ and the establishment of the affiliated College for Women in 1914, the State can boast that it is now prepared to give within its own borders extended and sufficient courses to all who seek preparation as teachers.

It will be noticed that the assembly in 1913 and 1915 saw fit to carry into execution almost literally the recommendations of the State board so far as they concerned Delaware College and the affiliated woman's college. These were institutions which touched the public schools mainly through the preparation of teachers.

It now remains to be seen how far the assembly accepted the suggestions of the board in matters pertaining directly and immediately to the public schools themselves; how far did the assembly feel itself justified in adopting the recommendations of the board?

In line with the recommendations which have been summarized, the State board presented to the general assembly of 1913 a bill providing for a revision of the school law of the State. It proposed that all incorporated school districts then existing in the State be retained, but that all others be abolished from the last Saturday in June, 1913. In their place the representative districts into which the various counties were divided should be declared school districts. These new school districts were given corporate powers. They were to be administered by a board of five school commissioners who were to be chosen for a term of three years by the legal voters of the district, including both men and women. The voters were also to determine by ballot whether real value (i. e., county assessment value) or rental value should be the basis for school taxation. A majority of the votes cast on this question was to settle it for three years. The electors were to decide by ballot also "whether any sum above that levied by law" should be raised for the use of the schools for the ensuing year, and, if so, how much.

Special meetings of the electors might be called when the school commissioners saw fit, and their duties were particularly and minutely defined. They were to have general control and direction of the schools of the district; provide, repair, and furnish buildings; keep the schools open at least 140 days in the year; employ and dismiss teachers; expel pupils; make up the assessment list and determine the extra taxes; provide free textbooks; make school reports; settle financial reports with auditor; take steps to enforce compulsory attendance, and maintain oversight and regulation of the schools.

The State board was to appoint before June 1, 1913, a State commissioner of education who was to be secretary of the board and its

¹ Laws of Delaware, 1913, ch. 122.

executive officer. His duties were defined. The board was instructed also to appoint the county superintendent. He was to be given a salary of \$1,500, an increase of \$300. He was required to make reports, but his duties were, in the main, advisory rather than mandatory in character.

This bill was presented to the general assembly in amendment of and to take the place of the act of 1897 (ch. 67, vol. 21), but unfortunately neither the detailed report of the State board, which bears date of February 10, 1913, and has been reviewed in this study, nor the above bill was favorably received in the assembly or in the State. The report commanded little attention and the bill was felt to be wrong in some of its proposed measures; and because of this hostility was not reported out of committee. The districts were not changed, and the county superintendents failed to secure their increase in salary.

It was found impossible to get better pay for the county superintendents for reasons that were then well understood. The newspapers were in favor of this measure as a rule; they understood that the salary then paid was entirely insufficient to attract the kind of men needed, but they were not enthusiastic and apparently the people in general felt the same way.

Consolidation failed because the idea was too new to the people and to the assembly. The people could not be convinced that it was real economy to do away with the old single school district, and with the one-room school. All they could see was that it would cost more money to have consolidation of schools, that control would pass out of their hands, that it was impracticable to transport children to school. They did not realize sufficiently the real advantages of the graded school. The landowners apparently did not oppose the bill; the great body of the people who would have been benefited by consolidation did not properly understand what it meant and were therefore against it.

As to the most important item in the recommendations of the State board, the proposal to change the basis of taxation from rental to real values, a citizen of the State who urged the enactment of the amendment, writes:

Everybody knew that the system of taxation was unspeakably unfair; that it could not be fair to tax personal property at its real value and real property at its rental value. As a matter of fact through all its history the land in Delaware has been owned in large tracts by fairly well-to-do families. Most of the farmers are tenant farmers. It was the old idea that the tenant living on the farm, and whose children went to the rural school, was the one who got the benefit from the school and should therefore pay the greater part of the tax. The tenant therefore paid school tax on the real value of his farming implements, stock, etc., while the owner of the land paid only on the assessed rental of the land.

The landowners have always been more powerful in the general assembly than any other element, and our attempt was the third strong attempt made to change the system of taxation. As the previous assembly had almost passed such a bill, we felt quite sanguine. The opposition was not open; the newspapers did not oppose the change in taxation; most of them were entirely silent on the point, for they were probably told to say little about it. The active opposition came from the large landowners who knew that the change would increase their taxes. They did not say much, but as they were almost all men of influence they worked quietly and effectively. The landowner is often the bank president or the bank director or the employer, and he is in a position to gain his end often without threatening, often without even suggesting. Nothing that could be said or done could make many of the best men see the public-spirited side of the matter. They knew the old way was wrong, but they would not consent to a change because it meant more taxes.

II. THE STATE SUPERINTENDENCY REESTABLISHED.

After it became evident that the assembly of 1913 would not increase the salaries of the county superintendents, consolidate the school districts, nor abandon the rental value system, a separate act was secured providing for a State commissioner of education, whose appointment was placed not in the hands of the State board of education, but in those of the governor. This bill even met with much opposition on the ground that it merely created a new and useless State officer. The newspapers, however, did not oppose the measure; they rather encouraged the project of having some one to really direct the actual work of the schools, but the bill would never have passed if the governor had not used his influence in getting it through. The act¹ provided that the governor should appoint "some suitable person" to be commissioner of education of the State and secretary of the State board of education. His term was to be for two years, and he was required to be—

a person of good moral character and well qualified mentally to perform the duties of his office. He must have had, at the time of his appointment, at least five years' experience as a teacher; and must hold a certificate of graduation from some reputable college or normal school.

The duties of—

said commissioner shall be such as shall be prescribed by the State board of education and shall be directed toward the betterment and standardization of the free schools within this State. As secretary of the State board of education he shall keep and file all documents, reports, communications, and other papers of said board and shall conduct the correspondence.

The choice of the governor to fill this important office was Charles A. Wagner, Ph. D., who entered upon his duties as commissioner of education for the State about the middle of June, 1913.

It will be seen that this act made the State commissioner the executive officer of the State board. He was to take orders from them,

¹ Laws of Delaware, 1913, ch. 106.

to act as their secretary, and as their agent to execute their decisions. The law fixed the salary of the commissioner at \$2,000 and gave the board \$500 for expenses.¹

An act of 1915 which had in view the general improvement of the schools in accord with the report of 1913 was that which provided \$10,000 a year, beginning with 1915, to enable the State board to participate by way of aid to the "altered districts" in the erection of new or in the alteration of old school buildings, and the furnishing and equipment thereof. The board was not permitted by the law to contribute more than 20 per cent of the cost or to invest more than \$2,000 in any one altered district nor to expend more than \$10,000 in one year.²

The same act, after making most elaborate and detailed provision for "the alteration of the boundaries of school districts by union or otherwise," permitted the State board to come to the aid of any of these altered districts (either by union or consolidation) which was seeking to establish a four-year high school by contributing to its support annually a sum not exceeding \$1,000. The total expenditure for this work in the State was not to exceed \$5,000 per annum.³

In addition to the above acts of general application passed in 1913 and 1915 there was the usual number of acts of local application providing for consolidation or authorizing the boards of cities and towns to raise money by taxation or bonds, to increase school facilities, and erect school buildings. These acts concerned in particular the schools of Wilmington, which city was preparing to borrow \$150,000 for the erection and equipment of an addition to the high school.⁴ This school was also becoming a center, a clearing house, for the schools of the surrounding country; nonresident pupils were now by invitation following its courses, and for payment for this service the assembly this year voted to its board of public education the sum of \$4,638.30, earned by the instruction of nonresident pupils during the scholastic years 1912-13 and 1913-14.⁵ A teacher's contributory pension system had been established in that city in 1911,⁶ but the schools were apparently not doing as well as was to be expected. Supt. Twitmyer reported in 1913 that nearly one-third of the pupils were retarded because of the faults of parents or because of ill health coming from curable defects. Others pointed out about the same time, however, that the cost of public-school

¹ Laws of Delaware, 1913, ch. 106 and 107. An act of 1915 (ch. 159) raised the salary of the superintendent to \$3,000 "while said office is held by the present incumbent," and another act of 1915 (ch. 160) increased the fund for miscellaneous expenses from \$500 to \$2,000.

² Laws of Delaware, 1915, ch. 164, sec. 2311V, sec. 39V.

³ *Ibid.*, ch. 164, sec. 2311W, sec. 39W.

⁴ *Ibid.*, ch. 165.

⁵ *Ibid.*, ch. 166. The sum of \$4,025.80 had been paid in 1913 (ch. 109) for 1910-11 and 1911-12.

⁶ Laws of Delaware, 1911, ch. 208.

education in Wilmington was considerably less than the average of 195 other American cities, although the average cost of textbooks was higher. It was proposed in the assembly of 1915, in the interest of efficiency, to reduce the city school board from 13 to 7 members to be elected practically from the whole city. The board itself proposed its own abolition and that its duties be transferred to the city council. Neither proposal prevailed, and the matter is still a subject of discussion (Jan., 1917).

The assembly of 1915 further encouraged the development of town high schools by voting sums in payment of the tuition of non-resident pupils and to make up deficiencies to the Lewes board of education, to those of Frankford, Rehoboth Beach, Wyoming, DuPont, and to the Millville High School.¹ Other acts of 1915 concerned the public schools in Newark, New Castle, Smyrna, Dover, Milford, and Georgetown. The limit of taxation set in earlier laws was raised; districts were incorporated; and progress was general along educational lines, especially in case of the incorporated and graded schools.

Nor were the Negro schools neglected in the special appropriations. In 1913 the usual appropriation for the purpose of building and repairing schoolhouses for the colored children was extended for two years, carrying with it \$2,000 per year. It was again renewed in 1915, carrying \$1,750 per year.² In 1913 the sum of \$3,000 was granted the State College for colored students for a similar purpose, and in 1915 the assembly repaid to the college a debt of \$2,000 which it had incurred in maintaining a summer school for colored teachers. This summer school had been organized in 1907 and maintained by private subscription for two years. It was then taken over by the State College for five years and maintained at a cost of about \$500 a year. In 1915 the assembly gave the college \$2,000 in settlement of this account and provided \$500 annually for the continuation of the school.³

But the careful student has noticed already that these acts concerned the colleges with pedagogical courses for teachers, the schools of the cities and towns, the incorporated and graded schools; that this later legislation helped such schools as the above to raise more funds, to secure better accommodations, and in general to advance the interests and class of work for which they stood. The more progressive schools were thus helped by this legislation to still further advance and develop their work. But what of the lower schools—the rural and ungraded schools—what service came to them from State legislation in 1913 and 1915? First of all was the State superintendent. The reestablishment of this office undoubtedly made for

¹ Laws of Delaware, 1915, ch. 184.

² Laws of Delaware, 1913, ch. 108; 1915, ch. 161.

³ *Ibid.*, ch. 125; 1915, chs. 125, 191, 192.

progress among the rural schools by increasing the possibility of supervision and making for a closer correlation. The increased powers given to the State board looked in the same direction, but beyond these two lines of improvement the ungraded rural schools were in 1915 where they were before the board made its report in 1913.

III. THE CAMPAIGN OF 1916—DISCUSSIONS AND INVESTIGATIONS.

Within recent years surveys, discussions, and investigations looking to the general improvement of the schools in Delaware have been almost continuous and have been conducted by both State and county school officers. They have not been without good effect. One, looking to the improvement of schoolhouses, was conducted by A. R. Spaid, superintendent of schools for New Castle County.¹ He published in 1912 a study on the school buildings of that county with special reference to number, character, and location. He found the majority of them unsatisfactory in one or several particulars and pointed out the necessity for consolidation and transportation. He even went to the extent of locating the proposed consolidated schools. In the centers proposed each school was to have ample playgrounds and gardens, and it was suggested that forenoons be devoted to lessons with books and the afternoons to doing things, while lunches should be served by the school.

Supt. Spaid was not satisfied with the physical and sanitary arrangements of the school buildings of the county:

From the specific arrangements which you requested me to make, based on the measurements of school buildings, you will learn of the great need for immediate improvements in many school districts. I might say that few districts have made any effort to improve the sanitary conditions of their school grounds. Many outhouses are as small, dark, and filthy as ever. * * * I recommend that your commission take steps to enforce the rules. * * * The heating and ventilating of rural schools is a serious proposition. * * * Our present system of heating the schoolroom should be changed. * * *

Then follows a detailed list of all the public schoolhouses in the county, showing the defects and shortcomings in each. Few were found to be satisfactory, and most were lacking in light, air, or floor space, or in all.

In the same way State Commissioner Wagner has sought to increase the general efficiency of the schools through a careful study and detailed discussion of the subject of school attendance. His conclusions have been published in two pamphlets, the one entitled "Public School Attendance of Delaware Children in the Year of 1912-13: A Study and an Appeal" (Wilmington, 1914); and the other as "Some Damaging Effects of Poor School Attendance on Delaware

¹ Supt. Spaid resigned about June, 1913, because the salary received was too small.

Children: Conclusion of the Study of Attendance, Year 1912-13" (Dover, ca. 1915).

It is thought that the conclusions of these papers are worthy of being summarized. In preparing the statistics on which the first of these studies is based, the city of Wilmington was omitted from consideration and the remaining schools were divided into two classes, the incorporated schools, which were in most cases town schools, and the rural or unincorporated and ungraded schools. The statistics used do not cover the total number of incorporated and rural schools in the State. For this study there were taken 11 incorporated schools and 10 rural schools from different sections of the State and such as were thought to be fairly representative of the whole.

It was found that in the incorporated schools the length of school term was 177.3 days; that the average attendance per pupil was 127.5 days, or an average attendance of nearly 70 when measured in terms of per cent. In town schools an average attendance of 90 per cent is regarded as low. To have attained an average of 90 per cent in Delaware would have required a daily average attendance of 159.5 out of 177.3 instead of 127.5 days:

The difference between 159, which they should have attended, and the 127 days which they did attend shows how broken and irregular or discontinuous is the incorporated school attendance. Nor must the mere arithmetical difference, 32 school days, be regarded as expressing the difference. Thirty-two school days is more than a month and a half of school! This is more than one-ninth of the term!

When consideration is devoted to the rural schools, the situation is considerably worse. The length of term for the rural schools for the State was 156.3 days. The average attendance was 89.7 days, or 56.8 per cent of the total available period the schools were open. When the incorporated and rural schools are taken together, it is found that the 17,122 white children in these two classes of schools were in attendance only 63 per cent of their time.

The situation in the colored schools was still worse. The average length of the school term was 137 days; the average attendance for the State excluding Wilmington, was 57 days, or 42 per cent. The waste, then, in the case of the colored schools amounted to 58 per cent. As the entire sum devoted to the colored schools was \$29,408, it appears that 58 per cent, or \$15,191.57, was wasted by failure in attendance. Of this failure the commissioner remarks: "Better husbandry than this indicates should be one of the first requirements for these funds, the larger part of which is given by the State."

The commissioner translates these wasteful expenditures, brought about by poor attendance, into dollars and per cents of the school revenue and makes the following exhibit:

Waste from poor school attendance in Delaware.

Counties.	Total expenditure.	Per cent of attendance.	Usefully spent.	Waste-fully spent.	Per cent of waste.
New Castle County:					
Incorporated schools.....	\$48,355	74	\$35,802	\$12,543	26
Rural schools.....	39,684	62	24,004	15,080	38
Kent County:					
Incorporated schools.....	56,692	70	39,684	17,008	30
Rural schools.....	29,574	53	15,533	14,041	47
Sussex County:					
Incorporated schools.....	53,635	70	37,604	16,031	30
Rural schools.....	48,022	55	26,412	21,610	45
Colored schools:					
New Castle County.....	7,147	51.7	3,695	3,452	48.3
Kent County.....	11,395	45.9	5,230	6,165	54.1
Sussex County.....	10,866	48.7	5,292	5,574	51.3
Total white.....	272,232	65	179,939	92,313	35
Total colored.....	29,408	48	14,218	15,191	52

Of this waste in the white schools the commissioner remarks:

The waste is almost 35 per cent of the entire sum. That is, of every dollar spent for schools and education last year, the children got the benefit of \$0.65 and the other \$0.35 was wasted. In addition, they received lessons of careless use of this money, irresponsibility, indifference, slowness to perceive an advantage and to make use of it, which will hinder them all their lives.

For the State at large the commissioner estimates that 37 cents out of every dollar spent for the education of children did the children no good "because they are not in school."

In the first of these studies by Commissioner Wagner most attention is given to a vivid presentation of the school situation in the matter of attendance with forceful arguments and appeals for improvement. In his second study he points out some of the results of poor attendance: "Such partial and irregular attendance has very damaging effects, indeed it has almost none but damaging effects," for it brings about retardation and this again reacts on the pupil and makes him still less inclined to attend regularly and more inclined to leave school at an earlier age. Town schools are better than rural schools because attendance is more regular, reaching 90 per cent or more, and for this reason promotions are more regular. The pupils in the rural schools recognize this superiority themselves by crowding into the town schools. The State provided that 250 pupils per county from the rural schools be received in the town schools for admission to the high-school grades, but the enrollment totaled about 350 per county instead of 250. This superiority of town over rural schools was placed at about 25 per cent.

Commissioner Wagner discusses also the high-school enrollment in the State and points out that while regularly about one-third of the children should be in the high schools, Delaware had outside of Wilmington about one-half of that number, or 16 per cent, in the high schools. He adds: "This is a good showing when we remember that

no rural district has any high school. The showing justifies the purpose of the legislature in securing high-school privileges in the incorporated schools for the rural children."

It was shown in another table, moreover, that one out of every five children who were attending the public schools was of high-school age, but was attending the grammar grades to get the instruction given there. This retardation, the commissioner remarks, "is the price our children are paying for slack and indifferent attendance during the early grades of school."

In all this discussion, based as it is on sound reasoning and moral suasion, there is insistent urging looking toward the permanent betterment of school attendance. A school attendance law, passed in 1907 and revised in 1909, required attendance for five months per year between the ages of 7 and 14. It seems to have been fairly well enforced, although little discussion on the subject is to be found, but it is evident that the commissioner based small hopes on this law for bettering the general situation.

The commissioner has apparently but one suggestion. He says:

In the incorporated schools the decrease in both numbers and in attendance occurs only after the fifteenth year. In the rural schools the break occurs after the fourteenth year. This apparent year longer—that is, this continuing in school after the compulsory age has expired—is probably due to the fact that many parents permit their children to complete the eighth or last grade of the rural schools, which they do just about a year behind time on average. If this is a correct surmise, then practically the children are left in school only as long as the law keeps them there. If this is correct, the manifest duty is upon those who would safeguard the interests of the children and the State to raise the compulsory age to 15 or 16 years, even if for the last two years only partial school attendance be required. With the coming of consolidated schools and good high-school departments, the wisdom and propriety of such a requirement could not be doubted, and it should unhesitatingly be enacted.

There was organized at the Delaware College in April, 1915, a supplementary agency, which promises to be of service in advancing the cause of the schools. This is the Delaware Cooperative Educational Association, which has Prof. Harry Hayward as the guiding spirit. Prof. Hayward is also a member of the State board, which about that time asked the county superintendents for a report on the consolidation of rural schools.

Commissioner Wagner announced the following program for consideration of the assembly in 1917:

1. A permanent card record system of pupils' work.
2. Relieving schools that are too large.
3. Assistants for the county superintendents.
4. Establishing standard requirements of conditions for schools.
5. Basing proportion of State dividend given a school district on its percentage of attendance of the children.
6. A minimum attendance law based on age and grade of pupil.
7. State payment toward cost of tuition of all high-school pupils.

8. Appointment of a State high-school inspector, who shall be assistant to the commissioner of education.
9. More exact report of cash received and expended by school districts.
10. Levy school taxes on real value of real estate, as is now done for county purposes
11. Regular health inspection of school children by their teacher.
12. Permission for county teachers' institute to be held jointly, or combined, in any county of the State.
13. Increase of salary for the county superintendents.
14. Revision of plan of management of the money affairs of the colored schools.
15. Appointment of a commission to revise the entire school system.
16. The establishment of a textbook depository within the State, where schools could order and secure regular supplies of textbooks.

This program has been published and called to the attention of the leaders of the State. It has been accompanied by two pamphlets prepared by the State commissioner and entitled a "Discussion of the State board of education's proposals for school legislation, 1916," and "Delaware's school-tax system: An inquiry and its answer, 1917," and by many short contributions to the State press.

The proposed changes most emphasized in the campaign for the advancement of school interests were the revision or codification of the schools laws and the revision of the method of State taxation for schools.

In the matter of school law, the State commissioner points out:¹

The existing body of school laws is lacking in unity, in consistency, in harmony, and adequacy. * * * What is needed is not revision, but reconstruction, so as to exclude contradiction and disagreement among the various acts and to introduce simplicity, harmony, and completeness by making the parts conform to the general principle of organization of the whole system. * * *

As constructed, law after law from 1829 up to 1911, the ruling idea and purpose was to leave as much power and authority in the trust of local school committees and to put as little as possible into the trust of any central board of authority. The act of 1911, by which the State board was reconstructed, marks the definite beginning of the policy of putting into trained and experienced hands those duties and offices which should be performed by someone specially trained and experienced in that kind of duty. The act creating the office of commissioner of education is a still further application of the principle of authority centered and power placed in the hands of a central body, to fix rules and regulations in matters where special knowledge and skilled judgment are needed. This does not mean that all power and authority shall be taken from the local districts or from the local school committees. All matters which can and may be decided by the common sense of the average citizen can and should be left to the local commissioners; all matters requiring special knowledge, skill, training, or experience should be put into hands having this knowledge, skill, training, or experience. The harmony which needs to be worked out, therefore, is to bring the laws passed before 1911 into relation, agreement, and congruence with the new principle recognized and established when the acts of 1911 and 1913 were made law, and put over the entire system a central authority with power to regulate in matters requiring expert knowledge and skill.

¹ In Delaware State News, Jan. 11, 1917.

Of equal dignity and importance with the reconstruction of the school laws of the State is the reconstruction of the State system of taxation for schools. Says Commissioner Wagner: ¹

The present plan of school taxes dates practically from the establishment of the system in 1829. For school purposes it assesses the "clear rental value of lands," the value of personal property (as horses, cattle, etc.), and a certain assessment as a head or capitation assessment. * * * Since the assessment of farms then yields only a very low total assessment for a school district it must necessarily be true that the tax rate will be relatively high; therefore, at the high rate, the amount of taxes paid by the personal property owner and by the capitation assessment will be very high in comparison with what it would be if land were assessed at its real value. * * * The high rate on the school assessment bears very hard on the personal property owners and capitation taxpayers and very lightly on the payers on "rental values." * * *

Higher school taxes are not generally opposed, but higher school taxes under conditions where the biggest part of the burden falls on one class, this is bitterly opposed where there is a rankling sense of injustice felt toward the system. Given a tax system that is regarded as fair and just, bearing equally on every class of citizen, and increases of amounts of taxes levied are not only probable, but very certain. * * * By far the most forcible single objection urged to consolidation roots itself in the tax system. * * *

When this was written the State board of education had not fully decided to propose a change in the tax laws to the next legislature. Many citizens in all parts of the State have unhesitatingly and unequivocally expressed their belief that reform should begin with that feature, since that is fundamental.

In his latest pamphlet, "Delaware's School Tax System: An Inquiry and its Answer" (Wilmington, 1917), Commissioner Wagner proves with more detail the inherent injustice of this tax system. He takes a certain school district and shows how for county tax purposes the assessment was \$48,990, while for school-tax purposes the assessment of this same district, identical in all respects with that used as the unit for the county tax, was only \$13,655. The result was that the men who pay only a personal property and capitation tax "pay grossly out of proportion to their just dues under an equitable system." It was pointed out that in the city of Wilmington and in the towns of Lewes, Rehoboth Beach, Laurel, and Seaford real estate was already being taxed for schools at its real and not its rental value, and it was insisted that the tenant class had no reason to be frightened over the threatened rise in rents, for all landholders were on the same level.

At the end of 1916 the forces of reform had not yet been closely consolidated, for the commissioner was careful at that time to point out that the school board was not then a unit in the belief that the reorganization of the tax system should be regarded as the basic necessity. The rental value idea was as old as the school system; natural conservatism, love for and pride in the past, a dislike of

¹ In Discussion, etc., pp. 12-14.

increased taxation on real estate, and, most of all, lack of understanding among the people themselves have retarded and delayed but not destroyed progress toward the goal.

Commissioner Wagner, however, has insisted that when the taxing system was placed on "a basis of equity, disregarding class ideas and distinctions, and incorporating fairly and fully the recognized principles of taxation in a democracy," the most important improvements desired "would logically follow or would be easily obtainable."

This meant the organization of a campaign of education among the people with the hope of bringing them to an understanding of the real situation, with the belief that when the demand from the people became strong enough the desired changes would follow.

With this object in mind, Commissioner Wagner inaugurated a campaign covering the State and conducted by the commissioner, the county superintendents, the school principals, the leading teachers, and with the assistance of the press and the pulpit, the granges, the parent-teacher associations, the new century clubs, the home leagues, the debating societies, the institutes, and other public forums, and all other leaders and organizations for the purpose of enlightening the masses of the people and encouraging them to demand from the general assembly the enactment of the proposed reforms. The campaign was enthusiastic and State wide, and almost from house to house in its scope.

IV. THE SCHOOL LEGISLATION OF 1917.

After this story of the struggles of leaders in Delaware for advanced educational legislation had been written, the general assembly met in regular session in January, 1917, and the following brief summary of its educational activities, with comments, has been furnished by Hon. Charles A. Wagner, formerly State commissioner of education in Delaware, but by recent appointment now superintendent of schools of Chester, Pa. Dr. Wagner says:

Two agencies proposed new educational laws in the recent legislative session: One was an advanced public sentiment expressing itself through legislators themselves; the other was the State board of education and the sentiment behind its program. Among the enactments that originated outside of the State board of education were these: Paying all expenses of teachers at summer school; fixing the minimum teacher's salary at \$45 per month; increasing the annual appropriation for public schools from \$132,000 to \$250,000. The governor of the State, Hon. John G. Townsend, proposed and even demanded the payment of expenses of teachers at summer schools. Of course, the State board of education heartily indorsed these measures and threw its entire influence for their enactment.

Among the bills proposed by the State board and passed were these: Increase of salary of county superintendents from \$1,200 to \$1,600 (the proposal was for \$2,000); appropriating \$1,500 annually for the education of foreign-born citizens; appropriating \$2,000 a year for standard schools, at the rate of not more than \$50 to each school; lengthening the county institutes to five days and increasing the appropriation therefor

to \$200 for each institute; providing \$15,000 to equal the Federal appropriation of a like amount for the installation and extension of agricultural and industrial education; providing for teaching first aid to the injured; providing that the tax levy without recourse to the voters be raised to \$100 in each district in Sussex County, thus making the tax required in all districts equal; providing for education of the feeble-minded; changing the school tax system so that taxes shall be assessed on real value of real estate instead of rental value; providing for the appointment of a school code commission of five to unify, harmonize, and reconstruct the school system, and appropriating \$5,000 for the expenses of such commission.

The backbone of the effort for new legislation centered in the last two bills. An inequitable, iniquitous, and inadequate school tax system is thus ended, after many years of injurious operation. More money for schools and a more friendly, because more righteous, interest in schools will be sure to result. This change was easily of first importance and also the most difficult to secure. Through the new code commission it will be possible to simplify and unify present more or less chaotic control and management, so that a complete, congruous State-wide system of control and operation shall emerge.

Dr. Wagner having resigned, the Hon. A. R. Spaid, sometime superintendent of education in New Castle County, was chosen his successor and entered upon his duties as State commissioner of education in July, 1917.

Chapter IX

RETROSPECT AND PROSPECT.

Having traced with more or less detail the course of the public schools in Delaware from the earliest times to the present, it is now desirable to indulge in retrospect and find if possible the thought which may be said to characterize the schools of the ante bellum as well as those of the later periods. What was the idea for which the Delaware schools stood, and for what do they stand to-day?

When the schools during the period ending with the opening of the Civil War are considered, it is plain that the whole may be characterized by a single word—*empiricism*. It was a period of experiment and of trial; the work itself was known to be tentative and liable to rejection at any step.

The efforts of the ante-bellum period may themselves be divided into two periods. The first comes down to 1829; the second dates from 1829 to 1861. The first was again divided into two shorter periods, during the older of which the foundations for the State school fund were laid, certain sources of income assigned to it, and the fund itself slowly and painfully, but faithfully, built up. During these years also the first efforts toward public education were made, but the State imbibed from the spirit of the times, from church influences, from historical continuity, and from their neighbors the idea that public education was only for those who were unable to educate themselves. With this idea in mind the acts of 1817, 1818, and 1821 provided for the organization and establishment of schools for the education of the poor, and automatically the population was divided into two classes—those who could educate their own children and those who could not—and with the result which might have been expected. The rich did not have to patronize the public schools and the poor would not. Schools were organized and put under the administrative care of leading citizens of the section, who visited their poorer neighbors and urged them to accept the educational gratuity put at their service, but this attempt to induce “a free-spirited and independent people to have their children schooled as paupers proved a failure.” The law allowed only \$1,000 to each of the three counties, but this sum was more than enough to meet all demands for schools of this sort, and it was found necessary to cover back into the treasury a considerable part of the allowance.

The law of 1821 sought to galvanize the system back into life, but it was dead, so dead that the county officers seem not to have thought a report of significance or value.

Fortunately by this one experience the leaders of Delaware came to realize that in their first effort at public education they were steering the ship of state on the wrong tack, for the people would not follow.

The leaders were wise enough, therefore, to change their course. The idea of a public-school system for paupers was promptly abandoned. Echoes of the idea are heard now and then through the next decade, but never again was the horizontal division of the citizenry of the State into pauper and nonpauper classes for the purpose of education seriously proposed in Delaware.

Since the poor stoutly refused to be educated as paupers, the act of 1829 proposed to educate all the people at the expense of all the people so far as available funds would permit. Judge Hall drew the bill, but he faced difficulties on the very threshold. The school fund was not rich enough to bear all the expense; the remainder was to be raised by taxation or private contribution; it was feared that a bill with a provision for additional taxation would fail, and the provision for local taxation was stricken out. The bill became a law without it. The schools were to depend on the school fund and on private contributions, and it broke down the first year. But the sober, second thought of the people was stronger than the legislature had realized, and in 1830 there was passed a law permitting the school district to raise by taxation such part of the required supplement to the school fund as a majority of the voters of the school district might deem proper. But already the enthusiasm of the advocates of education was beginning to slacken, for while the act of 1829 required the school district to raise a sum equal to that to be received from the school fund, the act of 1830 cut this requirement in half and still further reaction was inevitable. This came in 1837, when a general requirement of \$25 for each school district in the State was fixed as a proper contribution from the district. It must be kept in mind, moreover, that this law did not mean that each district should raise \$25 by taxation; it meant that before receiving its share of the school fund the district must raise \$25 by contributions or taxes, or, by doing neither, might be allowed to forfeit its share of the school fund, and this way of escape was often availed of by the less progressive communities. In general, however, this provision of the law met with a fair degree of acceptance and was for the most part fairly well executed.

The question of voluntary taxation being disposed of, a new one soon came to the front and remained in an acute stage till the end

of the period. This was that of general administrative policy. Judge Hall had drawn the law of 1829. He had deliberately and purposely carried it to the very limits of decentralization in order to encourage local interest. He had provided for county superintendents, but had given them neither a salary nor power, and it does not require a great stretch of the imagination to estimate their educational activities. He had left the entire movement of the schools to the decentralizing forces of the individual districts. There was no power above them to say what they should do or how they should do it. As Judge Hall himself expressed it, his purpose was to give each district power to say whether it should have a good school, a poor school, or no school at all. It was not hard to predict what would be the general fortunes of a system administered on such a theory. The results were true to form; some districts had good schools, some had poor schools, and some had no schools at all. The seed which was planted bore fruit each after his kind.

The leader of this experiment in educational individualism was of course, Judge Hall. He opposed a normal school for the training of teachers; he objected to all supervision; he fought every proposition that carried within it anything that seemed to make possible a centralization of power; he argued that the people must do these things for themselves, and when the State had given them the necessary authority its work was done. Devoted attention and good leadership won their reward. These conservative decentralizationists remained in power for a generation, 1829-1861.

But during most of these years they were not without opposition. Their opponents, however, labored under handicaps. They were at first not as numerous, and they advocated views that were more or less contrary to the general political doctrines of the day, and, what was still more important, they were not always fortunate in the matter of leaders. In the early forties Charles Marim, then county school superintendent in Kent, came forward as a leader of the progressives and gave great promise of usefulness. In him Judge Hall would no doubt have found an opponent worthy of his strongest efforts, and the State law requiring general State taxation for schools would have doubtless been enacted at a considerably earlier date, but Mr. Marim soon ceased to be county superintendent, and the progressives were again without a leader who stood forth as such and who gave promise of being able to win from the conservatives what they wished.

After Marim withdrew, no marked leadership was developed on the side of the progressives, but it is evident that from 1840 progress was being made by them. The laws were becoming more liberal: the idea of State support and State control was being strengthened; efforts were being made to foster State-wide institutions like

teachers' associations, educational associations, and an educational press; men were coming to think educationally in terms of the State, rather than in those of the county and the school district; and the social solidarity of the whole was beginning to be realized. Finally, in 1861, out of a system which was in the highest degree decentralized, and where every district was a law unto itself to do or not to do, came a new law which set the educational drift toward a closer State control. This law required that each school district in the State should raise by taxation a given amount before it might receive its share of the State school fund. By this law a greater assurance was given to the schools that each would receive the funds necessary to maintain it; the drift of education was at last turned away from decentralization and individual independence toward centralization and a more active participation of the State as such in affairs educational in character. The second phase of the struggle for public-school education in Delaware now came to a close. The first period ended with the recognition of public-school education by all for all; the second with recognition of the idea that this education was to be the work of the State as such, rather than the work of a few individuals acting under the sanction of the State which still held itself aloof.

The year 1861 saw the passage of the first general State law ordering a tax levy in all the counties for public education, and it therefore inaugurated a new era in Delaware educational history. The period between 1861 and 1875 was then one of changing ideals, and a preparation for that which followed. Under the law of 1861 the school districts were *required* to levy a minimum tax for schools. They were *allowed* to levy, when so authorized by popular vote, an additional tax to increase the efficiency of the schools, and were also permitted to borrow money for the same purpose. This gave the more ambitious town communities the opportunity to take over what was left of the old-time, local, private academies, and with them as a basis to incorporate and organize a system of local schools that were destined to become real State institutions. In this work Wilmington took the lead, and the smaller cities followed after. During this period also the first efforts looking to the education of the colored race were made and the feeling which looked to a general State organization began to make itself manifest. Agitation began which demanded the appointment of a State superintendent and county superintendents with real powers of direction, supervision, and control. It was demanded also that the annual elections, held to fix the sums needed for school use over and above the minimum required by law, should be abandoned and that school taxes should be levied and collected just as other taxes and not by the elaborate and special machinery then in use.

These idealists were then still far ahead of their day, but those who had the interests of the schools at heart and most realized their real needs were most insistent on the necessity of some action which should make for greater centralization as represented in the State superintendent. They failed in their efforts in 1869; they were again unsuccessful in 1871. They presented an interesting bill in 1873, with all the details of such a system worked out, but while they again met defeat, their work was not without results. The public was slowly but surely forgetting the doctrines of decentralization in which they had been reared. They saw that the policy of let-alone had not produced good schools; they realized that the old doctrine to which they had listened so often—that the people might be safely trusted to do what was for their best interests—was not true and that a serviceable school system for the State as a whole could be bottomed only on general State law with close State supervision. The State was thinking, and as a result of this self-examination was passed the act of 1875, which provided a State superintendent and closer supervision for a system which was now for the first time becoming a real State system.

The school act of 1875 provided some of the requirements of a modern system. A State board of education was created, and a State superintendent, who was in reality its executive officer, was appointed. The law required him to visit and examine all the schools at least once a year, to confer with the teachers, correct their weaknesses, and report on their schools. He was made a real supervisory officer, but his duties were much more than he could perform until an assistant was appointed in 1881. The superintendent was also empowered to examine, grade, and certify all applicants to teach. This was a long step in advance, for before this there had been no qualifications demanded of teachers except the good will of the community. Responsibility to a common head made them at once responsive to the general desire for their improvement; graded certificates enabled the superintendent to properly place blame and reward, while the county institutes for teacher training which he was required to hold gave them the opportunity for further study and professional improvement. There was inaugurated, also, during these years, the movement which evolved a little later into a system of uniform and free textbooks. The amounts required to be raised from each district under the law were also increased, and in 1879 was inaugurated the policy of releasing the stronger town and city schools from State control, and in this way giving them the opportunity of striking out for themselves at a rate as fast as ability and inclination could carry them.

It was during these years also that the State began to make contributions apart from and in addition to the school fund for the support of the public schools. These contributions, assigned at first to the white schools only, were by degrees broadened so as to admit

the Negro schools as well. These by degrees came to take their coordinate place as part of a general State system, and it was even said by no less an authority than the State superintendent that in some parts of the State the colored schools were in better condition and more efficient than those for the whites. But with all of these steps forward, the old law of 1829, with its decentralizing ideas and individualistic tendencies, was not repealed. It was merely modified and given a modern turn. There were still in the State various systems practically independent of each other. The counties were independent of each other; within the counties were two systems, one for whites, another for blacks, both being without the coordinating authority of a county superintendent; the white system in turn was divided into incorporated and unincorporated schools and so were the blacks. The county systems, white and black, acknowledged only the common authority of the State superintendent. The city of Wilmington was entirely independent of the State system. It had no lord or master except its own board and city superintendent and the laws under which they administered its educational affairs.

Unfortunately, moreover, the progress accomplished under the administration of a State superintendent was not sufficiently appreciated to insure the permanency of his office. It was abandoned by the act of 1887 and the schools were left under the care of a State board which had no agent to carry out its will. In the place of this general State agent there were to be appointed county agents—superintendents. But while this was a backward step it was perhaps not so great as it might seem, for the State superintendent had not had any control over receipts and expenditures, and his authority had been in the main hortatory only. The superintendent's duty of visiting was taken over by the new county superintendents, who also examined the teachers, but certificates were now issued by the State board. The county superintendents were, within the limits of their jurisdiction, practically independent, and the school districts within the same limits entirely so, and while it might have been possible to fuse the various local units of the public schools into a single county system, there was now no controlling superior authority to coordinate and weld them into a single State whole. This might have been done by a strong State superintendent with extensive powers, but his office had been abolished and its place taken by a State board which had small power and was composed of individuals who had their own private affairs to demand their attention. It would seem that the good work done toward unifying the system under Groves and Williams was all to be lost and that the heyday of decentralization was coming into its own again. Nor was this supposition far from right. The county systems, the city, town, and independent systems all went at their own gait. They gave little attention to the

county superintendents, less to the State board, and if we are to judge by the printed reports these State and county authorities gave little to them, for while there were biennial reports published between 1887 and 1892 there was apparently no other till 1898, when the decadent condition of the schools forced the friends of public education to exert themselves vigorously in its behalf. The school district was still the basis for educational administration and taxation. That it was too small was acknowledged, but conservatism was still more powerful than all the agitation of school leaders; the incorporated districts were loth to give up any of the privileges which they had secured, and decentralization was still doing its deadly work.

The agitation resulted, however, in the reorganization of 1898, which gave the State board a new lease of life, and on a basis essentially different from what it had had during the preceding 11 years. Quickened and enlivened and with such new lease of power, it bestirred itself and attained success in building up the schools, but the main difficulty—the old one of decentralization—had not been removed.

The State board of 1898 was an improvement over its predecessors: the new board of county school commissioners with a county superintendent as their agent was a step in advance. The State board set various ideals before it toward which it was working. These included the elevation of the standard of qualification of teachers, and in the next few years the State provided that certain candidates for teachers' positions should be prepared for their work in schools outside the State at State expense; it improved the quality of the textbooks used; it provided for the revisal, consolidation, and publication of the whole body of school law; it advanced the grading of schools, and encouraged certain selected incorporated institutions to develop into high schools by sending to them at public expense the more promising and advanced pupils in the lower schools. But there was a lack of money, and the methods of distributing the State funds were antiquated. The law of 1901 undertook to correct this situation by fixing on the number of teachers and the length of school terms as the proper basis of distribution. The State now began also to enter more and more upon a deliberate plan to provide better schoolhouses, especially for the Negroes, and this was followed a little later by a forward move in the matter of the consolidation of rural schools and transportation of pupils. These in turn preceded the doctrine and practice of compulsory attendance (1907), while serious and successful efforts were made to hasten the development of traveling and free libraries.

In the matter of funds little advancement had been made, for funds were still entirely in local hands; they were raised and distributed locally; there was no accounting to a central authority;

and on the financial side the ways of thought were still along lines of decentralization. In the supplemental agencies, however, there was during the first decade of this century very much advance, while the character and extent of the general progress between 1880 and 1910 may be shown statistically by the following extracts from the census:

Total number of illiterates 10 years of age and over:

1880.....	19,414, or 17.5 per cent.
1890.....	18,878, or 14.3 per cent.
1900.....	17,531, or 12 per cent.
1910.....	13,240, or 8.1 per cent.

Native white illiterates 10 years of age and over:

1880.....	6,630, or 8.1 per cent.
1890.....	6,068, or 6.2 per cent.
1900.....	6,072, or 5.6 per cent.
1910.....	3,525, or 2.9 per cent.

Foreign white illiterates 10 years of age and over:

1880.....	1,716, or 18.5 per cent.
1890.....	2,118, or 16.8 per cent.
1900.....	2,476, or 18.3 per cent.
1910.....	3,359, or 19.8 per cent.

Negro illiterates 10 years of age and over:

1880.....	11,068, or 57.5 per cent.
1890.....	10,692, or 49.5 per cent.
1900.....	8,983, or 38.1 per cent.
1910.....	6,345, or 25.6 per cent.

Illiterates 10 to 20 years of age, inclusive:

1880.....	5,017, or 15.6 per cent.
¹ 1890.....	² 3,197, or 8.9 per cent.
¹ 1900.....	2,171, or 5.8 per cent.
1910.....	1,223, or 2.9 per cent.

In 1911, in response to a demand from the State board itself, that organization was abolished by law, and another, with longer tenure of office and more centralized powers of action, was constituted in its place. This is the board now in existence. Their first duty was to systematize and harmonize the work of the schools. They began by securing the appointment of a new executive officer—a State superintendent, or as he is called in Delaware, a State commissioner of education. They have been seeking also to advance the cause of centralization in the State, and there has been also noticeable improvement in the matter of grades and curriculum.

When the State board was reorganized in 1911, its work along three lines was marked out for it. The first was to make a report on the public schools, the second had to do with Delaware College, and

¹ 10-19 years inclusive.

² Estimated.

the third with the question of the higher education of women, but none of these plans had to do in particular with the hope for a greater centralization of the public-school system. Their report was published in 1913, and in it they boldly and frankly took their stand against the pet hobby of the old system—the independent school district. They pointed out that the unit in use was too small and advocated the “representative district” as a more suitable unit. They secured in 1912 a general and uniform examination of teachers. The graded and incorporated schools were then satisfactory, but the rural ungraded schools were not satisfactory, and this was due neither to individuals nor school officers, but to the law, to the prevailing theories of local self-government and taxation on rental values. This was the rock wall against which they found themselves, and while the board won its point in the matter of Delaware College, in that of the college for women, and in that for the appointment of a State commissioner, it then failed in those pertaining to the larger unit of organization and taxation for schools.

The State board and the State commissioner, though defeated in 1913, renewed their efforts in 1915, but with small success. Then came the vigorous and aggressive campaign of 1916–17, engineered and organized by Commissioner Wagner and promoted by all friends of education. The campaign then undertaken met with more than the anticipated success. The main bulwark of the conservative element—taxation on rental values—has been repealed, the burden of taxation is now more evenly distributed, and it seems evident that a new era of prosperity has dawned for the schools of the State.

PUBLIC SCHOOL STATISTICS, 1832-1914.

TABLE 1.—*School population, teachers, property, school year, enrollment, attendance—
In white schools only.*

Year.	School popula- tion, 6-21.	Teachers.	Schools.	Monthly salary.	Days in school year.	Value of all school property.	Total school enroll- ment.	Average school attend- ance.	Per cent in average attend- ance.
1875.....		527	370	¹ \$29.53	144		21,587		
1877.....	31,849	512	404	33.06	150	\$484,361	23,587		
1878.....	31,849	512	507	¹ 33.06	150		23,530		
1880.....	31,505	536	512	27.84	150	440,793	25,053		
1882.....	33,133	545	515	30.96	156	453,274	23,450	15,556	66.3
1884.....	35,009	546	544	32.31	157	606,066	27,037	17,852	64.4
1885.....	36,468	635	562	32.40	168	736,032	29,421	19,235	65.4
1887.....							² 26,578	² 16,309	61.6
1888.....			428		167		² 26,342	² 16,309	62.0
1889.....					175	811,749			
1890.....	33,589	605			175	811,749			
1891.....	33,589	605	499		175	850,592	28,667		
1892.....									
1893.....									
1894.....			549		173		28,412		
1895.....			635		172	1,107,180	29,860		
1896.....			715		176	1,080,168	31,181		
1897.....			677		166	1,092,167	29,353		
1898.....			704		182		30,367		
1899.....									
1899-1900 ³		579	430			368,472	25,570		

¹ Men only.

² Figures used are those for Kent and Sussex, same in 1887 and 1888.

³ Excludes Wilmington.

TABLE 2.—School receipts and expenditures, State only.

Year.	Delaware school fund.					Total paid for free text-books.
	Dividends and interest received.	Total receipts.	Total disbursements.	Balance.	Market value of fund.	
1876		\$80,904.15	\$80,904.15		\$448,999	
1882		39,141.72	39,141.72		496,749	\$5,579.45
1887	\$29,993.25	¹ 101,884.21	80,195.93	\$21,688.28	541,720	
1888	30,385.00	¹ 111,615.21	96,846.94	14,768.27	541,720	
1889	30,376.50	¹ 101,555.01	88,098.31	15,456.70	546,890	
1890	30,638.50	¹ 126,862.60	106,452.15	20,410.45	546,890	
1891	30,182.50	¹ 179,812.47	146,244.97	33,567.50	544,742	17,228.20
1892	30,638.50	¹ 182,421.54	138,146.72	44,274.82	544,742	12,008.73
1893	22,282.80	² 221,133.86	212,923.42	8,210.44	544,742	7,007.14
1894	30,790.50	² 165,963.67	136,262.59	29,701.08	544,742	8,826.89
1895 ⁴		² 196,788.69	180,771.36	16,017.33		
1896 ⁵		² 173,247.69	137,793.97	35,453.89		
1897	29,818.50	² 240,643.29	222,868.23	17,775.06	546,577	5,910.43
1898	29,744.50	^{2,6} 140,968.49	98,286.06	42,702.43		9,338.69
1899	30,118.25	⁷ 196,725.88	174,698.57	22,027.31	692,930	10,482.97
1900	33,727.00	^{7,8} 161,364.35	138,414.54	22,949.81	635,542	18,749.60
1901	34,019.75	⁸ 177,011.16	154,097.50	22,913.66	900,672	8,510.58
1902	34,467.00	⁸ 177,400.22	170,095.24	7,304.98	900,672	17,286.87
1903	40,767.75	¹⁰ 180,767.75	166,364.83	14,402.92	915,016	12,067.89
1904	40,063.50	¹⁰ 187,100.50	164,689.25	22,511.25	914,222	5,538.17
1905	54,308.50	¹⁰ 209,018.41	193,541.09	15,477.32	938,097	11,414.00
1906	40,714.55	¹⁰ 188,207.44	172,001.12	16,206.32	938,171	11,409.01
1907	41,375.60	¹⁰ 196,710.69	174,229.97	21,480.72	944,407	11,688.29
1908	26,649.35	¹⁰ 180,130.07	174,948.89	5,181.18	944,407	11,507.48
1909	56,201.85	¹⁰ 198,383.63	177,638.00	15,745.63	944,407	12,217.67
1910	41,375.60	¹⁰ 189,220.63	173,635.00	15,585.63	944,407	11,815.45
1911	41,675.60	¹⁰ 199,700.85	174,490.34	15,210.51	944,407	11,696.19
1912	41,099.35	¹⁰ 188,355.49	173,673.65	14,681.84	944,407	12,096.36
1913	42,051.85	¹⁰ 188,733.69	173,146.79	15,586.90	944,407	12,754.63
1914	41,575.80	¹⁰ 189,355.07	174,315.71	15,039.36	944,407	12,214.21

¹ Includes \$25,000 direct appropriation from State.² Includes loans to State repaid.³ Includes temporary loans to State.⁴ From auditor's reports, 1895-96; other figures from treasurer's reports.⁵ Includes direct appropriation of \$120,000 from State.⁶ Includes \$47,000 part appropriation under constitution of 1897.⁷ Includes \$100,000 direct appropriation from State.⁸ Includes \$42,702.43 paid to general fund.⁹ Includes \$5,000 loan to school fund.¹⁰ Includes direct appropriation of \$132,000 from State. The total State and county receipts for education and the total State and county expenditures for the same, 1905-1907, were as follows: In 1905, receipts, \$825,801, expenditures, \$519,351; in 1906, receipts, \$632,457, expenditures, \$501,746; in 1907, receipts, \$600,594, expenditures, \$553,249. Unfortunately for the student, the Delaware system does not demand detailed statements from the local authorities and they are seldom made.

TABLE 3.—Statistics of public-school education in Delaware, by counties, 1832-1911.¹

Year.	County.	Amount raised in districts, including taxation.	Amount received from fund.	Total available school funds, including balances.	Miscellaneous expenditures.	Salaries of teachers.	Total expenditures.	Number of districts.	Schools taught.	Average length of term, in months.	Number of pupils.	Paid for Sunday schools.	Property assessed valuation.	Market value of school fund.
1832.	New Castle.	\$6,206	\$3,963	\$10,159	\$2,113	\$7,264	\$9,477	66	45	+ 6	2,432	\$200.44		
	Kent.	4,152	4,490	8,672	1,918	4,672	6,590	45	32	+ 8	1,913	80.40	\$13,125,000	\$153,762
	Sussex.	2,062	2,884	4,946	1,900	2,244	4,144	73	31	+ 5	1,578	41.80		
1833.	New Castle.	6,961	2,861	9,753	2,053	6,877	8,930	70	38	- 10	2,063	191.20		
	Kent.	4,402	2,682	7,084	1,825	4,970	6,495	40	29	- 9	1,605	76.70	2,718,353	176,642
	Sussex.	2,203	1,961	4,124	1,624	2,420	4,044	73	28	+ 5.6	1,159	88.13	1,902,213	
1834.	New Castle.	6,602	3,261	9,923	2,707	6,006	8,803	72	39	+ 7.6	1,976	68.00		
	Kent.	4,281	2,319	6,550	783	4,969	5,762	45	35	+ 8	2,561	134.00	13,785,000	178,418
	Sussex.	2,845	3,834	6,679	1,959	3,927	5,886	76	51	+ 5.3	2,551			
1849 ² .	New Castle.	8,053	10,840	18,893					72		3,929			
	Kent.	3,280	10,146	13,426					48		3,120			
	Sussex.	2,573	7,121	9,694					78		3,413			
1846.	New Castle.	5,764	4,449	7,213	1,765	1,269	9,034	74	63	- 5	3,789	383.88		
	Kent.	1,961	4,616	2,667	567	2,752	3,349	48	24	+ 6	2,365	399.25	17,546,000	337,273
	Sussex.	2,539	4,210	4,949	1,259	3,744	4,963	76	70	+ 3	3,835	399.77		
1848.	New Castle.	9,754	10,405	20,159	3,056	6,563	19,619	74	75	- 9	4,970	398.29		
	Kent.	4,278	7,705	11,983	1,635	9,501	11,136	50	50	+ 9	3,191		17,662,000	338,273
	Sussex.	2,209	8,445	10,664	968	8,570	9,538	78	72	+ 6	3,432			

¹ The statistics in this table are based in the main on the auditor's reports, supplemented by the superintendent's reports. In some cases the years do not always exactly agree with the school period, but there is substantial agreement.

² The numbers in this column give the number of districts according to the serial numbers assigned them. The actual number, because of consolidation, was somewhat less.

³ From Hall's letter of June, 1843, to Henry Barnard. He adds: "In New Castle the dividend to each school district last year was \$145.73; in Kent, \$221.82; in Sussex, \$89.26."

⁴ The falling off of income in this year as compared with 1834 and 1848 would suggest error, but the figures here given are the sum of those given in the auditor's report for 1846 (see House Journal, 1847, pp. 398, 420, 435). They seem to represent the sums settled for on a given date, for the same report (p. 368, etc.) gives as paid to school districts in New Castle in 1845, \$5,780.17; in Kent, \$528.54; in Sussex, \$2,556.16. In the same way the amount reported as due at the distribution on Aug. 1, 1848 (see auditor's report in House Journal, 1848, p. 372 et seq.), was: New Castle \$9,013.10; Kent, \$7,992.07; Sussex, \$9,245.03. In 1850 (auditor's report in House Journal, 1850, p. 438) they were: New Castle, \$9,704.54; Kent, \$7,946.37; Sussex, \$9,251.92.

TABLE 3.—Statistics of public-school education in Delaware, by counties, 1832-1911—Continued.

Year.	County.	Amount raised in districts, including taxation.	Amount received from fund.	Total available school funds, including balances.	Miscellaneous expenditures.	Salaries of teachers.	Total expenditures.	Number of districts.	Schools taught.	Average length of term, in months.	Number of pupils.	Paid for Sunday schools.	Property assessed valuation.	Market value of school fund.
1850	New Castle.....	\$11,865	\$10,428	\$22,293	\$5,119	\$16,603	\$21,722	74	72	+10	15,216	\$392.00		
	Kent.....	5,229	8,018	13,247	1,979	11,409	12,968	52	55	-10	13,991	400.00	\$17,783,000	\$339,359
	Sussex.....	2,919	9,554	12,473	1,710	10,864	12,574	85	85	6.6	14,804	400.00		
1851	New Castle.....	12,360	9,704	22,064	5,420	16,521	21,941	74	81	+9	13,944	402.12		
	Kent.....	5,005	7,945	12,951	1,647	11,865	13,512	52	57	-8	13,012	400.00	3,077,000	442,006
	Sussex.....	3,111	9,001	12,112	1,966	10,969	12,964	89	91	+5	13,976	400.00	1,925,000	
1852	New Castle.....	12,650	10,120	22,770	5,988	18,185	23,773	76	85	7.5	3,638	392.75		
	Kent.....	5,109	7,834	12,943	1,537	11,550	18,077	52	53	+6	2,619	400.00	18,344,000	435,500
	Sussex.....	3,502	9,198	12,700	1,729	10,891	12,620	89	93		3,973	400.00		
1854	New Castle.....	19,114	9,581	28,695	9,340	20,660	27,000	77	79	9.5	3,861	494.92	19,010,000	435,500
	Kent.....	6,667	7,136	13,703	2,046	11,814	13,860	53	59	8.8	2,441	497.88	5,377,000	
	Sussex.....	3,379	9,063	12,442	1,674	10,963	12,637	91	90	5.8	3,881			
1856	New Castle.....	37,443	12,119	39,562	12,366	27,774	40,140	84	85	9.4	0,161	534.16	19,433,120	387,744
	Kent.....	8,048	8,425	16,473	4,252	12,781	17,033	63	61	+8	3,738	497.60	6,003,339	
	Sussex.....	4,117	10,826	14,943	2,735	12,469	16,194	101	97	-6	4,898	500.00	6,057,990	
1860	New Castle.....	37,821	12,675	40,496	11,093	30,172	41,265	87	84	+10	6,225	499.53	18,795,150	431,392
	Kent.....	9,243	9,067	18,310	3,738	15,258	18,996	84	80	-9	4,641	437.60	5,997,836	
	Sussex.....	4,814	11,579	16,393	2,758	13,966	16,697	131	125	+4.8	5,698	500.00	6,050,402	
1863	New Castle.....	34,065	12,600	46,665	15,966	31,129	47,095	88	86	8.6	5,265	517.40	22,447,000	431,392
	Kent.....	10,927	8,826	19,753	3,089	16,769	18,858	89	82	8.3	3,678	496.68	5,537,000	
	Sussex.....	6,051	11,217	17,268	2,960	13,922	17,012	144	138	5	5,813	498.92	7,010,000	
1865-64	New Castle.....	32,241	11,644	44,885	22,856	30,715	54,571	89	95	9	4,741	518.79	24,036,000	476,142
	Kent.....	11,611	8,505	20,116	4,222	17,226	21,448	96	92	8.4	3,283	480.07	5,716,000	
	Sussex.....	5,646	10,470	16,116	2,099	13,860	15,959	151	143	-3	4,349	492.50	7,072,000	

1865-66.	New Castle. Kent. Sussex.	47,630 14,628 7,594	12,870 10,480 12,983	60,500 26,318 30,577	21,066 3,794 3,170	38,657 21,138 18,719	59,728 24,922 21,889	89 100 157	83 92 143	- 8 + 7 4.7	6,451 4,522 6,393	497.35 496.44	23,098,000 7,070,000
1867-68.	New Castle. Kent. Sussex.	55,067 20,205 9,235	12,146 9,644 10,889	65,283 29,849 30,124	23,692 7,412 4,205	45,338 22,860 15,001	69,030 30,263 22,206	90 112 165	92 96 149	8.5 7.6 4.4	6,898 5,079 6,217	805.94 1,914.50 2,615.00	25,864,000 7,168,000
1869-70.	New Castle. Kent. Sussex.	84,636 19,667 9,746	10,142 8,501 11,400	94,778 28,168 21,146	27,447 6,043 3,806	44,832 23,069 18,504	72,279 28,112 22,310	91 116 175	150 98 156	9.4 8.2 4.3	7,542 5,091 6,592	567.71 485.43 500.58	..... 16,577,000 9,126,000
1872-73.	New Castle. Kent. Sussex.	131,779 21,540 9,065	10,049 8,737 10,327	141,826 30,577 19,962	76,938 4,796 1,950	60,307 23,569 17,565	137,245 30,365 19,515	96 118 175	96 102 151	+ 10 - 9 4.5	7,310 5,235 6,245	599.90 502.86 650.00	44,181,000 18,688,000 10,222,000
1873-74.	New Castle. Kent. Sussex.	127,266 22,128 10,369	12,759 8,841 11,402	140,065 30,969 21,711	70,943 6,216 3,196	68,350 25,324 19,043	140,263 31,640 22,239	96 121 178	104 106 159	9.4 8.7 4.5	8,225 5,075 6,581	438.80 489.24 7483.54	46,675,000 15,470,000 9,829,000
1879-80.	New Castle. Kent. Sussex.	106,392 23,396 16,044	9,710 8,766 10,047	116,062 32,163 26,091	18,769 6,250 3,187	84,151 26,038 22,992	102,980 38,268 26,179	98 125 186	122 115 173	+ 9.3 8.4 - 5	11,854 5,416 7,147	502.65 490.92 499.95	40,719,000 12,838,000 8,743,000
1887-88.	New Castle. Kent. Sussex.	147,792	27,312	176,104	48,689	127,922	176,611	98	261	- 10	14,298	.....	.....

¹ By my own addition; auditor's report contains errors.

² This decrease in the total school fund arises from the failure of the auditor to list certain stocks held by the fund; these were: 37 shares Bank of Delaware; 114, Bank of Smyrna; 254, Union Bank of Wilmington; 500, NBS the fees "applicable to the school fund" included marriage and tavern licenses, licenses to export and import slaves, to travel stallions. In 1860 they were again reported. In 1858 the fees "applicable to the school fund" included marriage and tavern licenses, licenses to export and import slaves, to travel stallions of nonresidents in the State, and to sell liquor.

³ The decrease of 1869 gives the true estate valuation in Delaware as \$48,943,434; the personal estate at \$24,749,313; total, \$73,692,747. By counties it was: New Castle, \$45,641,346; Kent, \$16,433,406; Sussex, \$1,567,785. See report of A. J. Calloway, State Auditor (A. R. for 1864, pp. 4-5). This report on "Funds belonging to the State, applicable to the school fund" apparently duplicates 3 items in the fund amounting to \$270,000. In the corresponding report for 1862 there is apparently a distinction between a fund of \$332,750 "belonging to the State, applicable to the school fund" and another of \$431,292 called "school fund." In other respects the reports of the two years are identical. In the corresponding report for 1874 (A. R. 1874, p. 2, one of the items is entered under the heading "Investments from which revenue is derived for the State."

⁴ A payment made for 3,223 pupils, number not given for Kent County.

⁵ Received for 3,090 pupils.

⁶ Received for 4,363 pupils.

TABLE 3.—Statistics of public-school education in Delaware, by counties, 1832-1911—Continued.

Year.	County.	Amount raised in districts, including taxation.	Amount received from fund.	Total available school funds, including balances.	Miscellaneous expenditures.	Salaries of teachers.	Total expenditures.	Number of districts.	Schools taught.	Average length of term, in months.	Number of pupils.	Paid for Sunday schools.	Property assessed valuation.	Market value of school fund.
1838.	New Castle.	\$132,543	\$38,610	\$133,375	\$40,856	\$116,507	\$157,364	99	108	— 10	4,689	\$470.25	\$45,881,000	\$408,749
	Kent.	34,332	21,323	63,423	19,366	28,203	57,069	132	135	— 8.5	5,786	485.52	12,517,000	
	Sussex.	24,068	24,837	58,552	8,249	41,196	49,445	194	185	+ 6.5	8,041	509.48	10,166,000	
1839-40.	New Castle.	146,201	30,436	178,637	59,942	123,068	188,007	108		10	14,168			
	Kent.													
1840-41.	New Castle.	166,224	29,208	243,581	78,590	138,596	212,176	99	135	— 10	14,548	247.05	45,883,000	532,595
	Kent.	33,722	27,696	74,899	18,981	41,560	60,831	132	124	9.3	5,390	500.00	12,917,000	
	Sussex.	26,658	35,364	70,998	9,349	46,652	56,001	200	200	+ 7	8,739	543.50	10,501,000	
1840-44.	New Castle.	169,000	40,039	299,563	77,271	154,529	238,100	87	308	9.9	14,051	588.76	54,673,000	546,577
	Kent.	31,056	24,220	62,365	14,409	42,120	56,539	97	136	8.7	6,053	449.62	12,146,000	
	Sussex.	24,113	36,690	70,396	11,275	53,177	64,762	158	202	7.46	8,178	506.86	10,825,000	
1844-46.	New Castle.	179,620	40,226	294,117	78,081	166,990	238,671	103	346	9.75	15,290	498.00	54,883,000	546,577
	Kent.	31,877	23,909	61,456	15,656	41,632	56,967	97	136	8.7	6,358	499.95	12,146,000	
	Sussex.	28,204	35,848	63,798	9,480	50,699	60,119	157	203	7.4	8,202	492.00	10,890,000	
1846-48.	New Castle.	192,450	39,201	237,176	89,241	147,496	233,737	103	369	9.75	15,555	499.95	12,290,000	546,577
	Kent.	31,722	24,143	60,673	15,044	41,621	56,665	98	139	9	6,565	499.95	10,874,000	
	Sussex.	34,635	25,749	64,355	13,451	49,122	62,553	157	207	7.7	9,121			
1848-49.	New Castle.	192,517	38,703	298,012	45,344	156,473	198,817	103	337	9.8	14,331	493.56	52,773,000	546,577
	Kent.	32,074	23,661	62,818	16,799	41,630	56,429	98	139	8.75	5,963		11,533,000	
	Sussex.	26,074	34,190	61,903	10,344	46,537	56,181		201	6.4	9,124		10,576,000	
1867-68.	New Castle.	202,337	51,089	294,486	27,167	20,066	47,233	103	356	9.5	16,896	491.34	44,845,000	543,965
	Kent.	31,199	31,553	62,752	17,000	42,730	59,730	122	147	9.3	6,193		11,581,000	
	Sussex.	24,010	45,678	79,698	12,647	56,130	66,517	190	201	8.5	8,308			

1890-1900.	New Castle. Kent. Sussex.	34,745 25,367 24,810	21,612 21,355 24,002	56,355 51,350 58,213	12,178 17,185 11,319	45,411 41,808 48,910	56,890 53,991 60,226	109 129 132	154 173 242	6,510 8,280 11,080	408.72 538.78	46,933,000 11,528,000	633,542
1900-5.	New Castle. Kent. Sussex.	246,464 52,088 35,968	65,410 39,150 33,176	336,305 28,446 90,051	127,454 34,980 16,639	204,493 61,637 71,866	332,744 97,530 86,057	138 163 288	454 118 265	17,288 7,160 10,659	..... 490.66 506.66	42,238,000 12,201,000 11,576,000	988,097
1905-6.	New Castle. Kent. Sussex.	344,535 40,797 37,028	68,190 35,877 33,649	345,431 27,097 90,099	90,275 21,657 22,608	229,397 65,163 74,575	319,772 84,830 96,154	.....	.....	.....	468.38	11,630,000	968,171
1906-7.	New Castle. Kent. Sussex.	340,798 46,096 51,567	68,606 39,845 30,868	409,475 86,911 102,250	115,266 21,349 22,841	213,993 64,534 76,276	368,340 86,853 99,117	.....	.....	.....	.....	28,140,000	944,407
1909-10.	New Castle. Kent. Sussex.	..... ..... .....	..... ..... .....	..... ..... .....	..... ..... .....	..... ..... .....	..... ..... .....	.....	101 206	8,084 9,979	618.00	57,822,000 13,827,000	944,407
1910-11.	New Castle.	36,543	50,840	57,332	26,791	66,155	92,046	.....	176	6,450	.....	57,926,946	944,407

Balances included to 1998.

No balances included after 1898.

Excludes Wilmington.

Teachers.

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1. PRIMARY SOURCES.

Acrelius, Isaac. New Sweden or the Swedish settlements on the Delaware. Trans. by Nicholas Collin. In New York Historical Society Collections, 1841, 2 ser., vol. 1.

Auditor's reports, x—1915.

The whole series of auditor's reports, from the earliest times to the present contain much material on the financial side of the school question.

Barnard's Journal of Education. Articles on education in Delaware: I. p. 373-74; XVI. 1866, pp. 127-29, 369-72; XVII. 1867-8, p. 807; XXIV. 1873, p. 239.

Bassett, Ebenezer D. Speech of Ebenezer D. Bassett, of Philadelphia, at the anniversary of the Delaware Association for the Moral Improvement and Education of the Colored People, held in Institute Hall, February 28, 1868. [Philadelphia, 1868.]

Caption as above; broadside, 1 l.; in Library of Congress.

Conrad, Henry C. A glimpse at the colored schools of Delaware. Wilmington, Del., 1883. 16 p. 8°

Constitutions, Federal and State. Edited by Francis Newton Thorpe.

Delaware Association for the Moral Improvement and Education of the Colored People.

Reports (not seen. See Hasse's Delaware Documents, p. 55) for: 1868 (February), 23 p., in New York Public Library; 1869 (February), 24 p., in Wilmington Institute Free Library; 1870 (March), 40 p., in Wilmington Institute Free Library.

Reports summarized in Annual Reports of the U. S. Commissioner of Education for 1871, p. 115-118; 1872, p. 55-56; 1873, p. 63-64; 1874, p. 56.

Other reports of this association were published as follows (see Hasse in Delaware Documents, p. 55). [2] 1877-78, Wilmington, 1878, 8 p.; [3] 1878-79, Wilmington, 1879, 8 p.; [4] 1879-80, Wilmington, 1880, 8 p.; [5] 1880-81, Wilmington, 1881, 8 p.; [6] 1881-82, Wilmington, 1882, 12 p.

These have been summarized as follows:

[2] 1877-78 in 3rd A. R. Supt. Free Sch., 1877-8, p. 67-70; [4] 1879-80 in 5th A. R. Supt. Sch., 1879-80, p. 27-31; [6] 1881-82 in 7th A. R. Supt. Free Sch., 1881-82, p. 38-43; 8. 1883-84 in 9th A. R. Supt. Free Sch., 1884, p. 111-117; 10. 1886 in 11th A. R. Supt. Free Sch., 1886, p. 57-62; 12. 1888, in 13th A. R. Supt. Free Sch., 1888, p. 66-73.

See also Hasse's Delaware Documents, p. 55; No. 6 is in L. C.; others in Bureau of Education.

Delaware Educational Directory. 1914-1915 [Wilmington, 1915]. 1915-1916 [Wilmington, 1916].

Delaware School Journal.

Published at Wilmington, Delaware, by Dr. A. H. Grimshaw, numbers being issued for November and December, 1854; January and February, 1855, being volume I, Nos. 1, 2, 3, 4.

Apparently no other numbers issued. U. S. Bureau of Education has Nos. 1 and 3.

Delaware State Normal University.

Reports and catalogues (both in one), 5 numbers, 1866-71.

A private institution.

Free Schools. Reports of State Superintendent and State Board of Education.

The following have been seen and are supposed to be all that have been published:

1. *Reports of State Superintendent:*

1st Annual, year ending April 1, 1876; 3d Annual, year ending April 1, 1878; 5th Annual, year ending December 1, 1880; 7th Annual, year ending December 1, 1882; 9th Annual, year ending December 1, 1884, also in H. J., 1885, p. 67-132; 11th Annual, year ending December 31, 1886, also in H. J., 1887, p. 830-919.

The 2d, 4th, 6th, 8th, and 10th reports seem not to have been printed.

2. *Reports of State Board of Education:*

Biennial report, period ending December 31, 1888 (also in H. J., 1889, Appendix, 247-57); biennial report, period ending December 1, 1890 (also in H. J., 1891, Appendix G, 117-218); biennial report, period ending December 31, 1892; report for 1898; biennial report for 1899-1900 (statistical); biennial report for 1901-2; biennial report for 1903-4; statistical report for 1910; report, 1913.

All the above reports are in the library of the U. S. Bureau of Education or in the Library of Congress.

General Assembly. Senate and House Journals, 1796-1861 and later.

Those in the Library of Congress have been seen and examined. This set is fairly complete, but not entirely so.

Hall, Willard. Address [on the new school law of 1829]. Extracts in Annual Report of the U. S. Commissioner of Education, 1871, p. 109-11.

Issued for circulation among the people of the State soon after the enactment of the law of 1829.

—— Letter to Henry Barnard, June, 1843, reviewing the fortunes of the Delaware public schools down to that date. 2 p.

MS. in U. S. Bureau of Education.

—— Reports to the General Assembly on the condition of the free schools of New Castle County. H. J., 1849, p. 214-229; same report in S. J., 1849, p. 120-134.

Judge Hall was the most prolific of the writers on public schools during the antebellum period. Most of his work appears in the proceedings of the New Castle County School Conventions.

Hasse, Adelaide R. Index of economic material in documents of the States of the United States. Delaware, 1789-1904.

The term "economic" is interpreted very broadly; p. 46-67 list the educational material.

Laws, Codes and Revisals, 1797-date.**Laws, Session, 1792-date.****New Castle County. Proceedings of School Convention of 1836, 1837, 1838, 1839, 1840, 1843, 1844, 1845, 1846, 1847, 1848, 1849, 1851, 1852, 1853, 1854.**

In Bureau of Education library.

Newlin, E. J. An address on the subject of normal schools, delivered before the Legislature of Delaware, February 17, 1857. Dover, Del., Delaware State Reporter, 1857. 18 p. 8°.**School laws of the State of Delaware, 1841. Wilmington, Del., 1841.**

A republication, not a codification.

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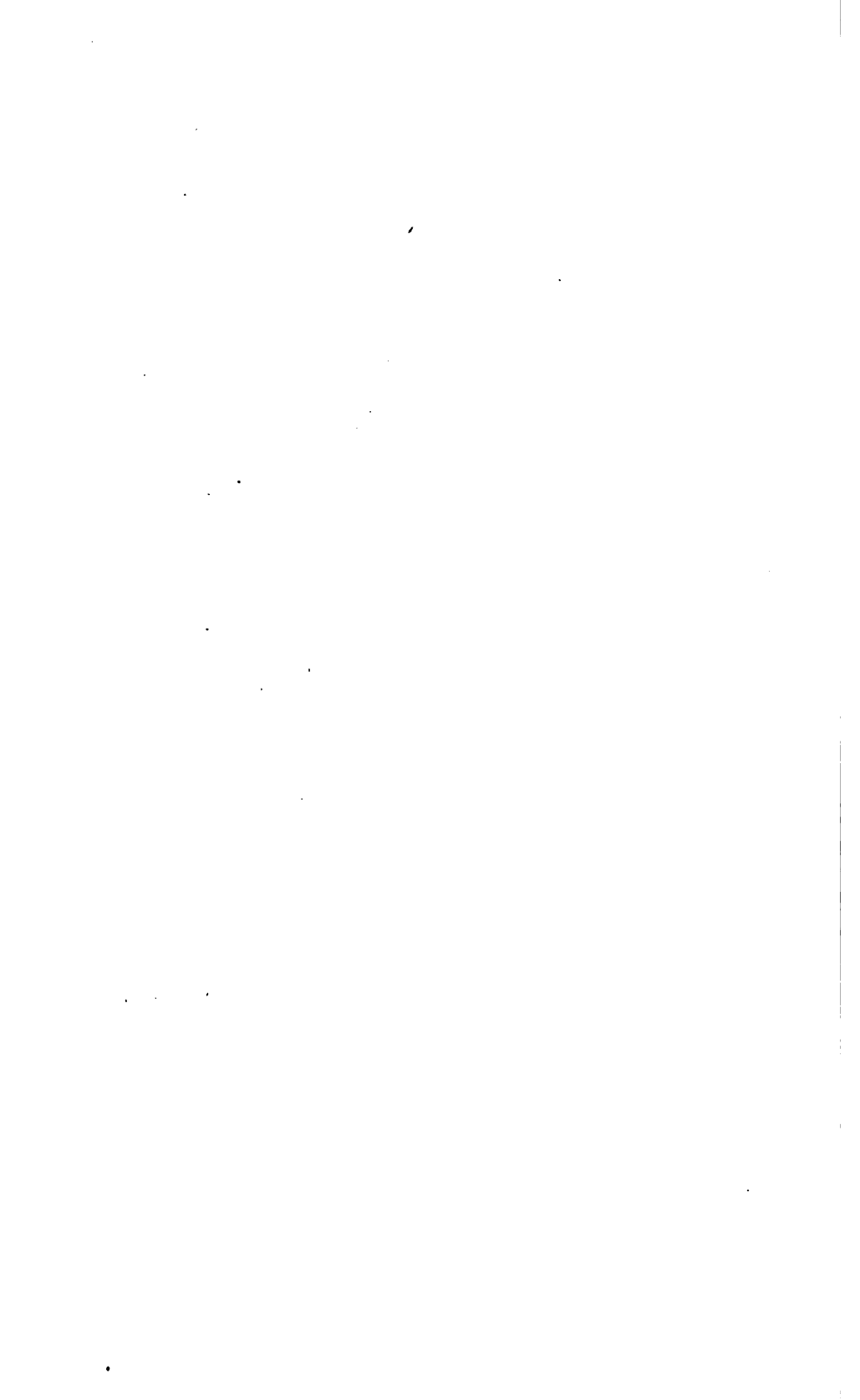
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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, July 17, 1917.

SIR: I am transmitting herewith for publication as a bulletin of the Bureau of Education the report of the survey of the University of Nevada, made under my direction and at the request of the governor of the State of Nevada by Samuel P. Capen, specialist in higher education in the Bureau of Education, and Edwin B. Stevens, executive secretary of the University of Washington. Although this report is primarily of interest to the citizens of the State of Nevada, it makes a contribution to the study of university administration which will have much interest for persons concerned with the management and control of similar institutions elsewhere and for all students of higher education.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

INTRODUCTION.

On July 8, 1916, the Commissioner of Education was requested by the governor of Nevada to undertake the direction of a survey of the University of Nevada and to report the findings to the educational survey commission created by the 1915 legislature of the State. The commissioner acceded to the request and appointed Dr. Samuel P. Capen, specialist in higher education in the Bureau of Education, and Mr. Edwin B. Stevens, executive secretary of the University of Washington, as a committee to make the survey.

During the months of August and September, 1916, the committee prepared elaborate inquiries, which were sent to the registrar and the financial officers of the institution. Members of the Bureau of Education also collected for the committee's use statistical material bearing on the population and industries of the State, on the development of its system of secondary and higher education, and on general educational conditions in the far West.

The committee spent the period from September 18 to October 1 at the university, in the personal examination of its organization, resources, standards, and policies. It held conferences with the president, deans, financial and recording officers, heads of departments, and the leaders of student organizations. It inspected the buildings and equipment and reviewed the records of financial and educational operations. It also held conferences with various citizens of the State not connected with the university. On September 26 it met with the educational survey commission and submitted to the members an outline of the proposed scope of its report. This outline met with the approval of the commission and has been followed, with a few minor changes of order, in the preparation of this document. On September 29 the committee met with the board of regents of the university. It discussed with the board the general policies of the institution and asked certain specific questions (printed in the Appendix, p. 137), to all of which it received full and frank replies.

The committee formulated its conclusions and recommendations in conference on the 30th of September and the 1st and 2d of October. The following three months were devoted to the preparation of the report, the first draft of which was approved by the Commissioner of Education and dispatched to the governor of Nevada, January 4, 1917.

The chairman of the committee met with the board of regents on February 7, 8, and 9, and discussed with members of the board the contents of the report. A few minor changes in the phrasing of portions of it were made in response to the board's suggestions. On February 11, 12, and 13 the chairman met with the former president, the deans and instructors, and various members of the faculty. As the result of these conferences, certain educational statistics were modified, a few phrases thought to be susceptible of misconstruction were changed, and one recommendation, based on what was shown to be an incorrect estimate of the enrollment, was eliminated. On February 14 the chairman presented the revised version of the report to the governor, at Carson City, and summarized for the benefit of certain legislative committees which dealt with university appropriations the principal recommendations of the report. On February 17 an abstract of the document was sent to the governor and to representatives of the Nevada press.

The committee takes this opportunity to record its grateful recognition of the patience and courtesy with which all of its requests for information have been met by the officers and faculty of the university. The burden which its inquiries imposed on the registrar and the comptroller was especially heavy. Its appreciation of the prompt and cheerful services which these officers have rendered is keen.

REPORT OF A SURVEY OF THE UNIVERSITY OF NEVADA.

Chapter I.

THE UNIVERSITY OF NEVADA AND PUBLIC SENTIMENT.

The University of Nevada, like every other State university, is the creature of the State. The major part of its support is derived from State contributions. Its primary purpose is to furnish certain kinds of higher technical and liberal training to citizens of the State. It was established by the people's representatives voluntarily, and it has been maintained (on the whole with surprising liberality) in accordance with the popular will. The people's rights in it are therefore undisputed.

Their keen present interest in its management and standing might also be taken for granted, both in view of the large annual investment of public money which it absorbs and because of the considerable percentage of the youth of the State who frequent it. It is not necessary, however, to take the existence of this interest on faith. No visitor can remain long in Nevada without being almost forcibly assured that its university occupies an exceedingly prominent place in the thoughts of most intelligent citizens and in the general economy of the Commonwealth. Indeed, there is perhaps no other State in which the State university for the time being bulks so large in the lives of the residents of the principal urban communities.

But, unfortunately, the unusual preoccupation of the State with the affairs and plans of the university is not in this case indicative of public confidence or satisfaction. Public interest in the University of Nevada appears to be largely compounded of partisanship, suspicion, and, on the part of many parents, concern at what are believed to be the present policies of the institution.¹ Representatives of various groups of citizens have presented to the members of the survey committee complaints and criticisms which in their totality constitute a formidable bill of particulars confirming this interpretation of the public attitude. It could serve no useful purpose to rehearse these charges in detail. Many of them, indeed, are trivial and unworthy of credence, unimportant if true, except that they register

¹ This statement refers specifically to the period during which the study was made (September, 1916).

an atmospheric pressure in which no public institution can permanently thrive. But out of the many unsubstantiated and irrelevant criticisms which were laid before the committee there emerge certain allegations too serious to be ignored. They must be faced unflinchingly by the university itself, if it is to preserve the good will of its constituency. They must be recorded in any report which aims to present a just estimate of the university's status and administrative practices. Their existence must to some extent influence the recommendations in which such a report culminates.

The gravest allegation made against the university by citizens of the State is that it is impossible for responsible persons to find out anything about its management. It is believed by many that not only is there no adequate institutional publicity, but that university officers deliberately try to prevent the public from learning significant facts. This applies to the major educational policies of the institution, as, for instance, the plans for the development of its various colleges. It applies especially to the financial operations of the university. The biennial reports of the board of regents contain, to be sure, full statements of the receipts and disbursements of university funds by the comptroller. But these reports are only biennial. The last one is nearly two years old. Inquiries made in the interval have been met with reticence or are believed to have been evaded. The quite natural conclusion of the inquirers has been that there is something to conceal.¹ The speculations as to what this might be run apparently all the way from general administrative extravagance to actual misuse of the university funds. Every change of university organization that has been made is suspected of being unduly costly, and it is assumed that the officers desire to suppress the truth in regard to expense as long as possible. It would be hard to overestimate the corrosive effect of such suspicions as these upon public confidence, or the seriousness of the handicap which they lay upon the development of the university.

Coupled with the widespread feeling of uneasiness in regard to the financial management of the university is the not uncommon belief that the tenure of members of the faculty is precarious. Certain persons think that professors are likely to be dismissed suddenly, arbitrarily, and on grounds that are actually sinister, whereas the reasons publicly assigned for such dismissals may be irrelevant to the true causes. Time and again the committee was seriously assured that if the forthcoming election placed certain candidates on the board of regents, then certain professors long in the service of the university and highly regarded by the community would be

¹ It should be noted that legally the board is under no obligation to report oftener than once in two years.

dismissed. The unanimity with which this opinion appeared to be held by the persons who interviewed the committee is very significant.

Uncertainty as to the basis for dismissal from office is absolutely disastrous to sound university work. If the public believes that professors can be dropped on slight charges, without a hearing and without recourse, then members of the faculty themselves will soon share the belief. The timid ones will fall into toadyism or become the victims of nervous irritation; the bold and independent spirits will go on their way, to be sure, but will shortly seek other positions. Rifts and cliques will appear in the instructing body itself. The morale of the university, that equanimity of spirit, that friendly cooperation necessary for effective teaching and productive scholarship, will be broken. Evidence is not wanting that part of the faculty of the University of Nevada is already persuaded that disciplinary action will shortly be taken against some of its members.

The rules of the board of regents relating to tenure of office are presented on page 29. If these rules are observed by the board itself, the suspicion just alluded to is unfounded. They place the tenure of faculty members on a sound basis. It is of course important that the rules should be held to and that they should be made public.

It might be expected that the student body and alumni of an institution which is at odds with an influential portion of its constituency, and in which a certain number of professors feel their tenure insecure for causes not involving professional competency, would exhibit a lack of solidarity and of institutional loyalty. The committee's opportunities to investigate student sentiment were limited. It did not, in fact, regard this as one of its principal tasks. Nevertheless, it was informed by citizens, by faculty members, and by representatives of the students themselves that the spirit of the student body, while giving evidence of improvement during the present academic year, was on the whole not strong; that indifference, unrest, and a vague distrust of the authorities prevailed. Officers of the university also stated to the committee that the institution has seldom received the strong support of a well-organized alumni body. An alumni organization exists, but apparently it has not been successful in enlisting the active interest of the majority of graduates. University spirit, in short, as the term is usually understood, is but slightly developed in Nevada. Certain devoted and able students are working loyally and with some effect to bring about a more unified student sentiment. A few alumni have stood by the institution in its time of stress and have preserved an undiminished interest in its affairs; but, on the whole, there is no ready and enthusiastic response to the requests and plans of the official leaders of the university.

Another allegation frequently made to the committee concerned the present attitude of the institutional authorities toward standards of scholarship. The belief was expressed that these had been slightly, but sensibly, lowered within the past two or three years; that while on paper the university seemed to be demanding as much or more than previously, nevertheless, there was lax enforcement of printed standards in the interest of increased enrollment. Later in the report the committee discusses this question, which vitally concerns the integrity of the institution, in some detail and shows that the allegation is unfounded.¹ Here it suffices to emphasize the insidious effect of such a belief. In respect to standards of scholarship, a State university must be free from suspicion.

If there must be no doubts of its virtue in the matter of academic standards, it is equally imperative that the attitude of the institution toward questions of public morals shall be firm and unequivocal. A university ought not to enter partisan conflicts which are to be decided by political action. Politics are not its sphere. But the university can not be indifferent to the moral conditions of the community which it serves. It must be against drunkenness, against gambling, against prostitution, and there should exist no scintilla of doubt anywhere that it is against these and all kindred evils. No legislative appropriation even if it would be jeopardized by a positive stand on these matters, which is extremely unlikely, is worth the price of the silence that seems to give consent. There are no business interests whose support is powerful enough to compensate for failure to follow the path of obligation.

The truth of these statements is, in the committee's judgment, strikingly confirmed by the present dilemma of the University of Nevada. Leading representatives of the university have of late refused to concern themselves openly with the moral conditions of the city and the State.² Of this fact there is no doubt. It has been several times stated both publicly and to the committee by the officials themselves.

The committee admits that the issues involved in the position taken by the university officers are not clean-cut. Perhaps it is not possible to define categorically what the action of such officers on any particular question relating to public morals should be. The committee assumes, however, that certain propositions will meet with general assent.

First, as has already been noted, there must be no doubt that the university as an institution stands for the highest individual and

¹ See p. 68 et seq.

² It should in justice be noted, however, that the authorities have unostentatiously taken steps to secure the cooperation of city officials in keeping the students of the university away from unwholesome resorts. The committee received testimony on this point from the mayor, the chief of police, and others.

social morality. It can not express its attitude politically, but its position should be clear and open. Second, the position of an institution can be publicly made known only by its officers. Without their voice it is dumb. Third, there is a negative aspect of the first proposition. The authorities of an institution may on no pretense permit the institution to profit by an act or a condition detrimental to the public welfare. Fourth, it must not be forgotten that an institutional official is a citizen as well as a member of the board of regents or of a faculty. As a citizen, he has a right to his own opinion on matters affecting the public interest. His position on board or faculty should not operate to gag him or to suppress his individuality.

These propositions appear to contain an irreconcilable contradiction. If the attitude of an institution can only be expressed through the men and women who make up its controlling bodies, and if such officers should in their capacity as citizens be perfectly free to give utterance to their own individual opinions, is not the position of the institution on questions of great public moment necessarily identical with that of those of its officers who are, through their respective offices, its spokesmen? In a certain sense this is true. Probably it is also desirable in a majority of cases. Aside from matters of partisan politics, in which the university should not take sides, enlightened opinion is generally unanimous on such questions as are here under discussion. In the rare cases where an official spokesman of an institution holds a contrary view to that held by the majority of the institutional community, two alternative courses of action seem, in the committee's judgment, to be open to him; he may declare what is the official position of the institution and at the same time state that his own views are divergent; or if he can no longer truly represent his community, he may resign. However, the committee believes that no rule can be proposed which would act as an infallible guide in such unusual circumstances. These are not cases for rules but for the tact and judgment that are the essential attributes of a real leader.

The committee has dwelt thus at length upon the principles involved because it has felt that a certain lack of precision existed in the public mind as to the rights and obligations of the university officers. At the University of Nevada there is apparently no dualism of view with regard to the issues under discussion. It is not suggested that the officers do not represent the academic community or that they do not individually desire the improvement of public morals. It is rather their reticence that is objected to; their eagerness to keep the university neutral; and their failure at the same time to take an open stand as individual citizens. But a university in these matters can not be neutral; neither can it safely endure the suspicion of being surreptitious. If

the committee may judge by the frequency with which the matter was brought to its attention, there is no policy of the institution, not even the alleged mystery surrounding its financial transactions, which has aroused a greater measure of dissatisfaction.

These are the major charges made against the University of Nevada by those citizens with whom the committee came in contact. That they are commonly made and widely believed is sufficient to produce a condition of tension between the university and its supporters that must in the long run be ruinous to the institution.

Contrasted with this is the type of relations which have been established between a few of the most influential State universities and their constituencies. These relations are characterized by public appreciation of new university projects, the mutually helpful interplay of advice and counsel between the officers of the university and representatives of the public—cordial cooperation, in short, between the university and the citizens in an effort to improve the intellectual, moral, social, and economic conditions of the State. State universities where such relations prevail have come to be regarded as instruments for the general welfare, remote from parties and the petty personalities of political conflicts, single as the compass in their aim, their every act open to public inspection, inviolable as the courts.¹

Facts and discussions appearing in later portions of the report will, it is hoped, throw further light on the basis of some of these allegations and will suggest remedies for a condition so unwholesome.² It suffices at this point for the committee to indicate whether or not there is any real justification for the public attitude. It has already been intimated that there is no dispute with regard to two recent policies of the university officials. There has been no sufficient effort to keep the State constantly informed of the operations of the institution, and the authorities have not taken an uncompromising position with reference to public morals. Unless the committee has been misled, these policies of reticence and noninterference constitute also the principal grievances of responsible citizens against the management of the university. Most of the other complaints which were called to the attention of the committee either spring naturally and inevitably from these or may be dismissed altogether as examples of the spiteful and unmotivated gossip which always falls to the lot of persons in charge of public institutions. But it is evident, for instance, that public doubt as to the integrity of financial operations has raised fears for the security of the teaching staff and skepticism with regard to academic standards—fears which have been still further augmented by what is interpreted as the

¹ Elsewhere in the report are noted the hopeful beginnings of such relations in Nevada.

² See especially Ch. II, pp. 28 et seq., Ch. V, pp. 76 et seq., and Ch. IX, pp. 112 and 113.

complaisant attitude of the authorities toward civic unrighteousness. The management of the university has, therefore, in a large measure brought about its own troubles.

However, the public is not wholly guiltless. Having organized an expensive, complicated, and delicate machine, the people of any State ought to place it in the hands of trusted and competent representatives and then support them loyally and confidently. The representatives should be held responsible for its successful operation. Ways should be devised to hold them to strict accountability. The people should realize two things especially: (1) Some institutional plans and transactions can not be made public on the moment of their inception, without causing serious embarrassment and added expense (e. g., the taking of an option on a piece of real estate), and (2) professional educators are rarely indifferent to moral questions, nor are they inclined to exploit the institutions to which they are attached for any sort of personal advantage. They are as prone to mistakes of judgment as other men and women, as fallible generally as other human beings. But the profession, being paid largely in gratitude and respect, simply does not attract men of strong aggrandizing tendencies, men greedy for power or wealth. The kind of persons who find their way into it are exceedingly conscientious, painstakingly zealous for the public service. The committee does not intend these remarks as a panegyric on the teaching profession. It merely states what is a commonly accepted fact.

The application of the fact to the present discussion is plain. The people of the State appear not to have given the university officers the benefit of the doubt. They have too frequently chosen to place a sinister interpretation on acts which probably were performed in perfect good faith. They have been distrustful and have lent a ready ear to slander. This is a state of mind for which the committee sees no external remedy. It is to a large extent responsible, however, for the present relations existing between the university and the public.

These observations lead the committee irresistibly to two conclusions. The State of Nevada needs leadership from its university which will establish such reciprocal relations as have already been described, leadership which will be strong enough to cure public opinion of its prevailing distemper. The State of Nevada also needs to take the control of its university out of politics. Until it does so no permanent improvement in the relations between the university and its constituency may be expected, nor will the university be able to furnish the leadership which the State requires. The connection of the university with partisan politics is the root of all the evil. This subject will be discussed in some detail in the next chapter.

Chapter II.

GOVERNMENT AND CONTROL OF THE UNIVERSITY OF NEVADA.

BOARD OF REGENTS.

The University of Nevada is controlled by a board of regents consisting of five members, elected at general elections, on party tickets. At each general election two regents are chosen for the long term of four years, and one for the short term of two years. The majority of the board is therefore subject to change once in two years, at any general election.

The following section from the Revised Laws of Nevada (4641, sec. 3) indicates the powers and duties legally assigned to the board:

First.—To prescribe rules for their own government, and for the government of the university.

Second.—To prescribe rules for the reports of officers and teachers of the university.

Third.—To prescribe the course of study, the time and standard of graduation, and the commencement and duration of the terms and the length of the vacations of the university.

Fourth.—To prescribe the textbooks, and provide apparatus and furniture for the use of pupils.

Fifth.—To appoint a president of the university, who shall have a diploma from some recognized college of learning of good standing, or some State normal school, who has had at least five years of practical experience as an instructor, who is familiar with the modern methods of imparting instruction generally approved in the United States, and who shall be indorsed as to moral character and qualifications as an instructor by the president and faculty of three institutions of learning authorized by law to confer degrees.

Sixth.—To prescribe the duties of the president, and fix his salary and the salaries of all other teachers in the university.

Seventh.—To require the president, under their direction, to establish and maintain training or model schools, and require the pupils of the university to teach and instruct classes therein.

Eighth.—To control the expenditures of all moneys appropriated for the support and maintenance of the university and all moneys received from any source whatsoever.

Ninth.—To keep open to public inspection an account of receipts and expenditures.

Tenth.—To annually report to the governor a statement of all their transactions, and of all other matters pertaining to the university.

Eleventh.—To transmit with such report a copy of the president's annual report.

Twelfth.—To revoke any diploma by them granted, on receiving satisfactory evidence that the holder thereof is addicted to drunkenness, is guilty of gross immorality, or is reputably dishonest in his or her dealings: *Provided*, That such person shall

have at least 30 days' previous notice of such contemplated action, and shall, if he or she asks it, be heard in his or her own defence.

The board must meet quarterly, and may hold special meetings at the call of the chairman. The State superintendent of public instruction must visit the university at least once in three months and report quarterly to the regents on its condition.

University accounts, like other State accounts, must be passed on by the board of examiners before being paid.

The following interesting legal provision is also worth noting, (4646, sec. 8):

It shall be the duty of the president of the university to instruct in the university, and, under the direction of the board of regents, to manage all matters connected with the institution, to employ assistant teachers and servants, purchase supplies, and make monthly statements to the board of regents of all receipts and expenditures, supported by vouchers.

CONSTITUTION OF BOARDS OF REGENTS IN OTHER STATES.

The following tabular view of the constitution of boards of regents or trustees of State universities and colleges shows that the utmost variety prevails with respect to the number of members, the method of choosing them, and the length of term. It is plain that there is no common theory of university control. Legislatures have determined the constitution of the governing boards of State universities on the analogy of boards of trustees of other corporate bodies with which the legislative members were familiar, or in accordance with a contemporary experiment in administration, or with the intention of providing political checks and balances. All of these motives are clearly to be read in the collected laws providing for the establishment of State boards of regents.

The form of board control, however, has come to be recognized as of vital importance to the success of any modern university. Much discussion of the subject has made it evident that university administration is not essentially unlike the administration of any other public function which is carried on by specially trained experts; such functions, for instance, as the public library, charities and correction, the care of parks, and, of course, the public schools. Through a long process of trial and error, States and cities have discovered certain principles which appear to underlie efficient board control of such public activities. To these there is now general assent. They appear to the committee to be equally applicable to the constitution and practice of the board of regents of a State university.

TABLE 1.—*State universities and State colleges—Organization of boards of control.*

Name of institution and of board.	Members.	How chosen.	Term in years.	Is president of institution member of board?	Titles of ex officio members.	Compensation of members.	Political requirements.
ALABAMA—University: Board of trustees.....	12	10 elected by board (1 from each of 8 congressional districts and 2 from sixth district), 2 ex officio.	12	No.....	Governor (ex officio president of board), State superintendent of education.	0	None.
Polytechnic Institute— Board of trustees.....	12	10 appointed by governor (1 from each of 8 congressional districts and 2 from third district), 2 ex officio.	12	No.....	.....do.....	0	Do.
ARIZONA—University: Board of regents.....	10	8 by governor, 2 ex officio.....	4	No.....	Governor, superintendent of public instruction.	\$5 per diem.....	Not more than 4 from same political party.
ARKANSAS—University: Board of trustees.....	9	7 by governor (1 from each congressional district), 2 ex officio.	6	No.....	.....do.....	\$2.50 per diem.....	None.
CALIFORNIA—University: Regents of the university.	23	16 by governor, 7 ex officio.....	16	Yes.....	Governor, Lieutenant Governor, speaker of assembly, superintendent of public instruction, president State board of agriculture, president Mechanics Institute, president university.	0	Do.
COLORADO—University: Board of regents.....	7	6 elected by people, 1 ex officio.....	6	Yes.....	President of university (without vote except in case of tie).	0	Elected on party ticket.
Agricultural College— State board of agriculture.	10	8 by governor, 2 ex officio.....	8	Yes.....	Governor, president of college.....	0	None.
School of Mines— Board of trustees.....	5	By governor.....	4	No.....	None.....	0	Do.
Teachers College— Board of trustees.....	7	6 by governor, 1 ex officio.....	6	No.....	State superintendent of public instruction.	0	Do.
CONNECTICUT—Agricultural College: Board of trustees.....	10	6 elected by State senate, 2 by alumni, 1 by State board of agriculture for 1 year, 1 ex officio.	4, 1	No.....	Governor.....	0	Do.

	(1)	Yes.....	Governor, president of college, president of State board of education, master of State grange.	0	Do.
DELAWARE—College—Board of trustees.....					
FLORIDA—University and State College for Women: State board of control.....					
GEORGIA—State University: Board of trustees ¹					
College of Agriculture—Board of trustees..... (Subordinate to university board).					
School of Technology—Board of trustees..... (Subordinate to university board).					
North Georgia Agricultural College—Board of trustees..... (Subordinate to university board).					
HAWAII—College of Hawaii: Board of regents.....					
IDaho—University: State board of education.....					
ILLINOIS—University: Board of trustees.....					
INDIANA—University: Board of trustees.....					
Purdue University—Board of trustees.....					
32 8 by governor, 20 by board of trustees, 4 ex officio.	(1)	Yes.....	Governor, president of college, president of State board of education, master of State grange.	0	Do.
5 By governor.....	4	No.....	None.....	0	Do.
28 18 by governor (1 from each of 12 congressional districts, 4 from State at large, 2 from Athens), 9 ex officio, 1 special life trustee by act of legislature.	8	No.....	Governor, 8 presidents (1 from each of subordinate boards of control). ²	0	Do.
11 By governor (3 from university board, 3 from directors of Georgia experiment station, 5 at large).	(1)	No.....	Commissioner of agriculture must be one of the 3 experiment station members.	0	Do.
10 By governor (3 from university board, 7 at large).	(1)	No.....	None.....	0	Do.
10 By governor (3 from university board, 7 at large).	(1)	No.....	do.....	0	Do.
5 By governor.....	5	No.....	do.....	0	Do.
6 5 by governor, 1 ex officio.....	5	No.....	State superintendent of public instruction.	\$100 per annum.	Do.
12 9 elected by people, 3 ex officio.....	6	No.....	Governor, president State board of agriculture, superintendent of public instruction.	0	Elected on party ticket.
8 5 elected by State board of education, 3 elected by alumni association.	3	No.....	None.....	\$6 per diem.....	None.
9 By governor (2 nominated by State board of agriculture, 1 by State board of horticulture, 1 by Purdue alumni association).	6	No.....	do.....	0	Do.

¹ Term is indeterminate, for life or until removed.

² The University of Georgia is composed of nine distinct units as follows: (1) The university at Athens; (2) the college of agriculture at Athens; (3) the school of technology at Athens; (4) the normal and industrial college at Forsyth; (5) the industrial college for colored youths at Savannah; (6) the north Georgia agricultural college at Dahlonega; (7) the State normal school at Athens; (8) the medical college at Augusta; (9) the south Georgia normal college at Valdosta. For each of eight of these units there is a governing board almost autonomous. The University of Georgia has a board of trustees composed of 28 members. The president or chairman of each of the 8 subsidiary boards is an ex officio member of the university board. This university board has a dual function. It is the superior or coordinating board of the eight subsidiary boards, and it is the actual governing board of the university at Athens.

TABLE 1.—*State universities and State colleges—Organization of boards of control—Continued.*

Name of institution and of board.	Members.	How chosen.	Term in years.	Is president of institution member of board?	Titles of ex officio members.	Compensation of members.	Political requirements.
IOWA—University, College of Agriculture, Teachers College; State board of education.	9	By governor	6	No	None	\$7 per diem	Not over 5 from same political party.
KANSAS—University; State board of administration.	3	do	4	No	do	\$3,500 per annum.	Not over 2 from same political party.
KENTUCKY—University; Board of trustees	32	15 by governor at large, 6 on nomination of the alumni, 11 ex officio.	6	Yes	Governor, superintendent of public instruction, commissioner of agriculture, President of university, 7 members of State board of Agriculture.	0	Board must be bipartisan.
LOUISIANA—University; Board of supervisors	15	12 by governor, 3 ex officio	4	Yes	Governor, President of university, State superintendent of public education.	0	None.
MAINE—University; Board of trustees	8	7 by governor, 1 by alumni association.	7, 3	No	None	0	Do.
MARYLAND—State College of Agriculture; Board of trustees	9	By governor	9	No	do	0	Do.
MASSACHUSETTS—Agricultural College; The corporation.	18	14 by governor, 4 ex officio	7	Yes	Governor, commissioner of education, commissioner of agriculture, president of college.	0	Do.
Institute of Technology—Corporation (private)	54	35 life members elected by corporation, 15 elected from alumni nominations, 3 ex officio, the president of institute.	5	Yes	Governor, chief justice of supreme court, commissioner of education, president of institute.	0	Do.
MICHIGAN—University; The regents	10	8 elected by people, 2 ex officio	8	Yes	President of university, superintendent of public instruction (both without vote).	0	Elected on special ticket.

Agricultural College— State board of agriculture.	8	6 elected by people, 2 ex officio.	6	Yes.....	President of college, superintendent of public instruction (both without vote).	0	Do.
College of Mines— Board of control.	6	By governor.	6	No.....	None.	0	None.
MINNESOTA—University: Board of regents.	12	9 by governor, 3 ex officio.	6	Yes.....	Governor, State superintendent of education, president of university.	0	Do.
MISSISSIPPI—University, ¹ A. and M. College, Industrial Institute: Board of trustees of the university and colleges of Mississippi.	9	7 by governor, 2 ex officio.	6	No.....	Governor, State superintendent of education.	\$5 per diem.....	Do.
MISSOURI—University: Board of curators.	9	By governor.	6	No.....	None.	0	Do.
MONTANA—University, College of A. and M. Arts, School of Mines: State board of education.	11	8 by governor, 3 ex officio.	4	No.....	Governor, State superintendent of public instruction, attorney general.	0	Do.
NEBRASKA—University: Board of regents.	6	Elected by people.	6	No.....	None.	0	Elected on party ticket.
NEVADA—University: Board of regents.	5	Elected by people, 4 for 4 years, 1 for 2 years.	4, 1	No.....	do.	0	Do.
NEW HAMPSHIRE—College: Board of trustees.	13	9 by governor, 2 by alumni, 2 ex officio.	3	Yes.....	Governor, president of college.	0	Not more than 5 from same political party.
NEW JERSEY—Rutgers College: Board of trustees.	41	33 by board for life, 5 by board on nomination of alumni association, 3 ex officio.	Life, 5...	Yes.....	Governor, chief justice, attorney general.	0	None.
Also State board of visitors.	24	By governor (2 from each congressional district).	2	No.....	None.	0	Do.
NEW MEXICO—University: Board of regents.	5	By governor.	4	No.....	do.	0	Not over 3 from same political party.
Agricultural College— Board of regents.	5	do.	4	No.....	do.	0	Do.
School of Mines— Board of regents.	5	do.	4	No.....	do.	0	Do.

¹ This board appoints a finance committee of 3 from outside its own membership, each member of which receives \$3,500 a year salary.

² One special additional member from De Soto County is appointed by the governor for a term of 4 years to act on university affairs only.

TABLE 1.—*State universities and State colleges—Organization of boards of control—Continued.*

Name of institution and of board.	Members.	How chosen.	Term in years.	Is president of institution member of board?	Titles of ex officio members.	Compensation of members.	Political requirements.
NEW YORK—Cornell University: Board of trustees.....	40	1 life member, 5 by governor, 15 by trustees, 10 by alumni, 1 by State grange for 1 year, 8 ex officio.	5, 1	Yes.....	Governor, president of university, lieutenant governor, speaker of assembly, commissioner of education, president of State agricultural society, commissioner of agriculture, librarian of Cornell library.	0	None (a majority may not be of any one religious sect or of no religious sect).
NORTH CAROLINA—University: Board of trustees.....	102	100 elected by legislature, 2 ex officio.....	8	No.....	Governor, superintendent of public instruction.	0	None.
State College of Agriculture and Engineering— Board of trustees.....	17	16 by governor, 1 ex officio.....	8	No.....	Governor (chairman of board ex officio).	\$4 per diem.....	Do.
NORTH DAKOTA—University: Agricultural College: State board of regents.....	5	By governor.....	6	No.....	None.....	\$7 per diem.....	Do.
OHIO—Ohio University: Board of trustees.....	21	19 by governor, 2 ex officio.....	Life.....	Yes.....	Governor, president of university.....	0	Do.
Ohio State University— Board of trustees.....	7	By governor.....	7	No.....	None.....	0	Do.
Miami University— Board of trustees.....	27	.....do.....	9	No.....	.....do.....	0	Do.
OKLAHOMA—University, School of Mines: State board of education A. & M. College—	7	6 by governor, 1 ex officio.....	6	No.....	State superintendent of education.....	\$6 per diem.....	Do.
State board of agriculture.	5	4 by governor, president of board elected by people.	4	No.....	None.....	(1)	President elected by party ticket.
OREGON—University: Regents of the university.	13	10 by governor, 3 ex officio.....	12	No.....	The State board of education, composed of governor, secretary of state, superintendent of public instruction.	0	None.

Agricultural College— Board of regents.....	13	9 by governor, 4 ex officio.....	9	No.....	The State board of education, composed of governor, secretary of state, superintendent of public instruction, master of State grange.	0	Do.
PENNSYLVANIA — State College: Board of trustees.....	31	6 by governor, 9 by alumni, 12 by agricultural societies, 4 ex officio.	3	Yes.....	Governor, president of college, superintendent of public instruction, secretary of State board of agriculture.	0	Do.
PORTO RICO—University: Board of trustees.....	7	4 by governor, 3 ex officio.....	Indeterminate	Yes.....	Commissioner of education (ex officio president and chancellor), treasurer, speaker of house of delegates.	0	Do.
RHODE ISLAND—State College: Board of managers.....	7	5 by governor, 1 from and by State board of agriculture, 1 ex officio.	5, 2	No.....	State commissioner of public schools..	0	Do.
SOUTH CAROLINA—University: Board of trustees.....	11	7 by legislature, 4 ex officio.....	6	No.....	Governor, superintendent of education, chairmen of committees on education of house and senate.	0	Do.
Clemson College— Board of trustees.....	13	7 by Clemson estate for life, 6 by governor for 4 years.	Life, 4...	No.....	None.....	0	Do.
Chapel the Military College of South Carolina— Board of visitors.....	10	5 by legislature, 5 ex officio.....	6	No.....	Governor, adjutant and inspector general, State superintendent of education, chairmen of military committees of house and senate.	0	Do.
SOUTH DAKOTA—University: College of A. and M. Arts. School of Mines. Regents of education.....	5	By governor.....	6	No.....	None.....	\$1,000 per year..	Must be selected from among the different political parties existing in the State.
TENNESSEE—University: Board of trustees.....	18	14 by governor (10 from congressional districts, 2 from Knoxville, 2 from Memphis), 4 ex officio.	12	Yes.....	Governor, superintendent of public instruction, commissioner of agriculture, president of university.	0	None.
TEXAS—University: Board of regents.....	9	By governor.....	6	No.....	None.....	0	Do.
Agricultural and Mechanical College— Board of directors.....	9	do.....	6	No.....	do.....	0	Do.
College of Industrial Arts— Board of regents.....	6	By governor (3 must be women).....	6	No.....	do.....	0	Do.

\$2,500 per year (president); \$6 per diem (others).

TABLE 1.—*State universities and State colleges—Organization of boards of control—Continued.*

Name of institution and of board.	Members.	How chosen.	Term in years.	Is president of institution member of board?	Titles of ex-officio members.	Compensation of members.	Political requirements.
UTAH—University: Board of regents.....	14	12 by governor, 2 ex officio.....	4	Yes.....	Secretary of state, president of university.	0	None
• Agricultural College— Board of trustees.....	13	12 by governor, 1 ex officio.....	4	No.....	Secretary of state.....	0	Do.
VERMONT—University of Vermont and State Agricultural College: Board of trustees.....	20	18 elected by legislature (9 university trustees, for life, 9 State trustees for 6 years), 2 ex officio.	Life, 6.....	Yes.....	Governor, president of university.....	0	Do.
VIRGINIA—University: Rector and visitors.....	10	9 by governor, 1 ex officio.....	4	No.....	Superintendent of public instruction.....	0	Do.
Agricultural and Mechanical College and Polytechnic Institute: Board of visitors.....	10	8 by governor, 2 ex officio.....	4	No.....	Superintendent of public instruction, president of board of agriculture.	0	Do.
Military Institute— Board of visitors.....	11	9 by governor 2 ex officio.....	4	No.....	Adjutant general, superintendent of public instruction.	0	Do.
College of William and Mary— Board of visitors.....	11	10 by governor, 1 ex officio.....	4	No.....	Superintendent of public instruction.....	0	Do.
WASHINGTON—University: Board of regents.....	7	By governor.....	6	No.....	None.....	0	Do.
State College— Board of regents.....	5	.....do.....	6	No ¹.....	.....do.....	0	Do.
WEST VIRGINIA—University: State board of control (financial). State board of regents (academic).	3 5	.....do..... 4 by governor, 1 ex officio.....	6 4	No..... No.....	.....do..... State superintendent of free schools.....	\$5,000 per year..... \$1,000 per year.....	Not over 2 from the dominant political party. Not over 3 from the dominant political party.

WISCONSIN—University: Board of regents.....	15	13 by governor (at least 2 must be women; 1 appointees from each of 11 congressional districts, 2 at large), 2 ex officio.	6	Yes.....	State superintendent of public instruction, president of university.	0	None.
WYOMING—University: Board of trustees.....	11	9 by governor, 2 ex officio.....	6	Yes.....	State superintendent of public instruction, president of university (both without votes).	0	Do.

1 The president of the college is secretary of the board without a vote. 2 West Virginia has created two boards, one to control finances, the other to control instructional affairs.

PRINCIPLES OF UNIVERSITY CONTROL.

The first of these relates to the number of members. *Experience has shown that public administrative boards,¹ consisting of from 7 to 15 persons have usually been most successful.* The main reasons are perhaps clear, but the committee ventures to restate them. They are: (1) Business is conducted most expeditiously and efficiently by a group small enough to sit around a single table and to discuss without formal parliamentary tactics; (2) the group should be large enough, however, to represent different elements and opinions in the body politic.

Many successful administrative boards, educational and other, consist of 5 members, as does the present board of regents of the University of Nevada. The committee is quite ready to concede that the difference in efficiency and representative character between a board of 5 and one of 7 members may be very slight or in given cases nonexistent. The criticisms and recommendations which it is about to offer concerning the Nevada board are based primarily on shortcomings in the constitution of that body which have no reference to its size. But the committee feels that, as it is going to urge a complete reorganization of the Nevada board of regents, the question of numbers should not be overlooked. A board of 5 members is more easily dominated by an influential personality than a board consisting of 7 persons. It is considerably easier to get a majority of 3 than a majority of 4.

The second principle to which allusion has been made concerns the method of selecting board members. Reference to the tabular presentation on pages 16-23 will reveal the fact that State boards of regents are in the majority of cases either elected by popular vote or appointed by the governor. The larger number of boards are appointed.

The committee unhesitatingly indorses the appointment of university regents by the governor, with confirmation by the senate, as against popular election. The weaknesses of popular election must already be painfully apparent to the intelligent citizens of Nevada. The drawback which overshadows all others is that the university is thus drawn unavoidably into the turmoil of partisan politics. The university is not on such occasions a major political issue, however. As far as its management is an issue at all, it is distinctly a minor issue.² It is the tail of the political kite. Candidates for the board of regents are frequently men to whom the party has refused what are

¹ This refers to boards which exercise legislative functions only. Executive boards whose members devote their whole time to the work of administration (such as the Kansas State board of administration) are not taken into account in this statement of principles.

² Advocates of the election of members of city school boards are strenuously opposed to having board members chosen at regular political elections. School issues are then lost sight of. Special elections for school directors are regarded as essential.

regarded as more desirable honors, but who must be recognized. The regency is perhaps a sop to wounded political vanity. Once in office, it becomes necessary to keep up political fences, perhaps to fight for reelection. The possible embroilment of the university in these activities need only be alluded to.

What genuine university issue can there be which once in two years requires settlement at the polls? A university should have no connection with or inclination toward any political party. If it is a question of reviewing carefully the acts or the competency of members of the board, the objection immediately arises that these matters never are, and can not be, weighed in the heat of a partisan conflict. If the State desires to register its opinion on the amount of support the institution should receive, it is not necessary to vote on the regents to do so.

It may also be very strongly urged that popularly elected boards do not in the long run command ability of as high an order as boards chosen by other methods. The common party practice already mentioned of using nominations to the board of regents to satisfy the desire of some men for political reward would of itself tend to place upon the board from time to time persons unqualified for the task. Moreover, few men of the type required for the performance of the duties of regent will of their own initiative engage in the disagreeable business of a campaign for the sake of the opportunity to render a difficult public service. The men who should sit on State boards of regents should be sought. The office of regent then becomes a post of honor bestowed for distinguished merit and integrity, a post which no citizen, however eminent, can refuse to accept. Several States have organized their university boards of regents so that membership of them is regarded in this light. Nothing less will permanently assure to State universities the enlightened government which such important enterprises require.

The foregoing remarks are not intended as a specific criticism of the present members of the board of regents of the University of Nevada. It is not the committee's function to pass judgment on the personal qualifications for their high office of members of the board, past or present. It merely points out that such results as it has just mentioned have been proved by the experience of many States to follow popular election, especially when such election is for short terms on party tickets and simultaneous with a general election. Whether these results have obtained in Nevada may be left to the citizens of the State to determine. It may be remarked in passing, however, that the committee was several times informed that nominations to the board had been used in the way just indicated, and that the participation of certain members of the board (those seeking reelection) in every campaign involves the university to

some extent also. An example of the unsettling effect on university work of this intimate relation of its governing board to party politics was indeed thrust forcibly upon the committee's attention—since its visit was made during a political campaign—and has already been mentioned. (See p. 8.) From all of which considerations the second principle, so often referred to, emerges. It might be stated thus:

The governing boards of State universities should have no connection with partisan politics. This condition is best attained if their members are appointed by some official agent representing the whole community, preferably by the governor.

Certain citizens of Nevada have raised two objections to this proposition. The first is that if regents are appointed the public has no control over them, no power to turn them out if they do not prove satisfactory. The second is that gubernatorial appointments are often made for political reasons, perhaps with a desire to control the board.

The first objection may, of course, be raised against filling any public office by appointment. The incumbent is inaccessible to a discontented electorate. There is no recall. On the other hand, the appointing officer has an opportunity to weigh the qualifications of the appointee for the particular post to be filled with a care that the electorate can never exercise. He is sensible also of the effect on his own reputation and political fortunes of an unfit appointment. In any event, the United States as a Nation and its component States as sovereign Commonwealths are committed to a dual method of filling public office. Federal judgeships, special positions carrying judicial powers, and most offices demanding highly expert capacity under the Federal Government are filled by appointment, and similar positions are in many States filled in the same way. Experience has not demonstrated the superiority of popular election as a means of selecting the holders of positions of this class. The bench of Massachusetts, for example, bears comparison with that of any State where judges are chosen by the people. It is not commonly suggested that the Federal judiciary or the Interstate Commerce Commission would be improved if recruited by popular election.

The second objection is easily disposed of. The safeguard against improper gubernatorial appointments made for political reasons is to render it impossible for any governor to appoint a controlling fraction of the board.¹

This brings the committee to the statement of the next principle, to wit: *University regents should be appointed for long terms.* Of the two chief reasons for this policy, one has just been stated. The other is that the honor and dignity attaching to the office are thereby

¹ Removal by the governor on proved charges of malfeasance in office may well be provided for in any act specifying gubernatorial appointment.

enhanced. If the governor makes but one appointment to the board of regents each year, or but one in two years, public attention is focused on the office, on the appointee, and on the appointing official. The appointment becomes an event of considerable importance in the life of the State.

A fourth principle, which again is the product of the experience of many communities with public boards similar in functions and duties to boards of university regents, is that *the members of such bodies should receive no compensation beyond their necessary traveling expenses.*¹ This principle is based upon several considerations. The men and women who should be appointed to board positions would not be attracted by the salaries or honorariums which the community is likely to pay. It has never been difficult, however, to find persons of the highest ability who were ready to render a necessary and honorable public service without reward. On the other hand, the salaries which have occasionally been paid to members of educational boards of control have in some instances proved attractive to persons of inferior capacity. The tendency in such cases is to throw the positions into the realm of political influence. Board memberships become "jobs" in the political sense. Once this tendency is established, persons of the type that should be drafted for board service are unwilling to accept appointments.

But perhaps the most dangerous outcome of the payment of salaries to members of educational boards is that it begets an inclination to earn the compensation by meticulous attention to the details of administration. Nothing is more disastrous to the proper functioning of an institution. It is essential that the legitimate limits of board action should not be transgressed. The committee understands the sphere of the governing board to embrace three main activities. These are: The determination of the general policies of the institution or institutions under its control, in consultation with the executive officers; the appropriation of moneys or the approval of the distribution of appropriations made by public appropriating bodies; and the appointment of institutional employees on the recommendation of the institutional executives. In other words, the function of the governing board is, in the broadest sense of the word, legislative. If it attempts to usurp executive functions, chaos usually follows.

The committee is happy to testify that the board of regents of the University of Nevada has, to a degree seldom observed in other States, recognized this distinction and that it has for some years confined its activities to the operations just summarized. The foregoing observations are offered, therefore, not in the way of criticism,

¹ The present board of regents of the University of Nevada is an unpaid board.

but rather to complete the statement of the principles fundamental to successful board organizations and to serve as a word of caution in case the State sees fit to reorganize the governing board of its university in the general direction of the recommendations which are to follow.

The last two principles which should be mentioned may perhaps be inferred from what has already been said. At all events, their acceptance by the people of Nevada may be taken for granted, in view of the composition and past policy of its own board of regents. They can therefore be briefly stated, without supporting evidence. They are:

(1) *Members of a university board of regents should be representative citizens, persons of enough education to enable them to form competent judgments on questions of university policy, preferably in a majority of cases university graduates; but not educational experts.* The most successful administration of public education has been furnished by lay boards, representing the best thought of the community and working through expert executive officers. (2) *The scope of the board's activities should be strictly limited either by law or by board ruling to the three general functions outlined above.*

Acceptance of these principles of educational administration will put the State of Nevada in readiness to adopt a system of university control which should remedy many of the past defects in its management and should remove the institution permanently from the baneful influence of politics.

The committee recommends that steps be taken to amend the constitution of the State to permit the creation by the legislature of a board of regents of the State university to consist of seven members, to be appointed by the governor and confirmed by the senate, each member to serve eight years and not more than two to be appointed in any biennial period. It further recommends that no member of the board receive compensation for his services, except his necessary expenses in attending meetings of the board.

The committee recommends a board of seven rather than nine or some larger number of members, because of the immense distances in Nevada and the consequent difficulty which attendance on board meetings imposes on persons living in the southern and eastern parts of the State.

POLICIES OF THE BOARD OF REGENTS.

The committee has inquired with some care into the recent policies of the present board, and it desires to record certain of its observations. Reference has already been made (see p. 27) to the wise division of power and initiative between the board and the executive officers of the university. This division, in so far as it concerns the

question of greatest moment to the educational integrity of the institution, is defined in Article VI, section 5, of the by-laws of the board. The section reads in part as follows:

The president of the university shall be the official administrator and executive agent of the board. He shall be ex officio a member of all committees; he shall attend the meetings of the board of regents and meetings of all committees; he shall make such recommendations to the board of regents from time to time as may seem to him wise, touching any phase of the university policy or administration. *He shall make all nominations for appointment to positions under the board of regents, and in case nominations are not approved he shall make others. It is not expected that the board of regents will accept without question all nominations of the president, but no appointments can be made without his nomination, and no dismissal can take place without his recommendation.*

This is for the most part admirable. If the State decides to reorganize the board of regents as recommended above the recognition of the proper prerogatives of the executive provided for in this by-law, especially in the italicized portions (italics are the committee's) should by all means be preserved. It is essential both to the maintenance of a sense of security and dignity among members of the faculty and to the defense of true university standards that the initiative, in all matters relating to appointment and dismissal, reside in the president.

Equally wise is the position of the board established three years ago, with relation to tenure of office. The following quotation from the minutes of the meeting of the board held September 22, 1913, states its declared policy:

The tenure of office of professors and associate professors is unlimited. Every professor or associate professor holds his position as long as he remains an efficient and progressive student, teacher, and investigator. When he ceases to grow, when he is beginning to die at the top, the president may consider whether it is time to sever his connection with the teaching body of the university.

The tenure of office of an assistant professor is five years from the date of his election.

Instructors and assistants are elected annually to their positions.

In case, for any reason, it becomes necessary to dispense with the services of any professor, associate professor, or assistant professor, the university will give official notice at least seven months prior to the close of the year, or on the 1st of December prior to June 30.

In the case of instructors and assistants, the university will give them notice at least five months prior to the close of the fiscal year to as whether the university wishes to retain their services or not.

The Bureau of Education has given considerable circulation and general indorsement to the report of the committee of fifteen of the American Association of University Professors on academic freedom and academic tenure made to the association December, 1915. The two chief postulates of the committee bearing on academic tenure were, (a) that appointments should run for a definite term, understood by both parties to the agreement, with ample notice in case of non-

renewal; and (b) provision for a judicial hearing whenever it becomes necessary to dismiss a person of professorial rank. The first of the association's demands, which everyone will agree is necessary to place academic appointments on a square and businesslike basis, is amply met by the vote of the board of regents just cited. In view of the public uncertainty concerning the tenure of university professors in Nevada (see p. 8), the committee believes the board might profitably consider the advisability of adopting a rule providing for hearings in cases of dismissal also.

It is apparent that many people in Nevada have little or no conception of academic freedom and the necessity for preserving it at all costs. The committee has before it newspaper articles and editorials published in the State within the year, calling for the dismissal from the university faculty of a professor who expressed in public an opinion on a public question of great moment to the State which differed from the opinions assumed to be held by the president and board of regents. The professor in question was even on one occasion referred to as a "hired man," whose silence, it was argued, in case he did not agree with his official superiors, had been bought by the salary which the State paid him. The committee was amazed to discover that this view of a professor's relationship to public questions appeared to have caused no shock, even to intelligent and fair-minded citizens. It was declared by many that the dismissal called for would probably be made. Such indignation as found expression in the committee's hearing was at the probable loss of a valued teacher rather than at the suggested infringement of the right of free speech.

The committee desires to emphasize the fact that on this vitally important question the board of regents of the University of Nevada has taken a much more advanced and high-minded position than a portion of the press of the State, or than those groups of citizens with whom the committee came in contact.¹ Resolutions passed by the board of February 6, 1914, and appearing in the minutes, constitute a charter of liberties which can be paralleled in few universities, State or private. The committee commends them to the attention of the citizens of the State:

Whereas there has frequently come before the board of regents for consideration the right of the president of the university and the members of the faculty thereof to enter into matters outside of and nowise connected with the university; and

Whereas it appears to the board of regents that no definite action was ever taken by the board relative to the president and members of the faculty taking part in matters not connected with the university; and

Whereas the board of regents of the university regard it as of fundamental importance that the men connected with the university should exercise the rights and privi-

¹ The questions submitted by the committee on the occasion of its meeting with the board of regents may be found in Appendix, p. 137. All of these were answered fully and satisfactorily by the board.

leges which belong to them as citizens of the municipality, and of the State, and of the Nation: Now, therefore, be it

Resolved, That the president, the members of the faculty, and all others connected with the university are, and have been at all times (in so far as the present board is aware), free to take part in all matters pertaining to the public welfare, as good citizens, and as good citizens to exercise the rights and privileges secured them under the law, with full freedom of thought and action.

And be it further resolved, That when those connected with the university take part in any matters pertaining to the public welfare of the Nation, or the State, or any locality in the State, their action is as an individual member of the community, unless such action is taken under the direction of the board of regents; but in all such matters, whether done for the public welfare of the Nation, or of the State, or any locality within the State, the regents regard it as of fundamental importance that the good name and standing of the university should be considered, and that no such action should be taken by the president, or any member of the faculty, or any person connected therewith, that would reflect upon the university, without first consulting the board of regents; and that no action should be taken by those connected with the university which would tend to create in the public mind the opinion that they were acting in any other capacity than that of an individual.¹

And be it further resolved, That all matters affecting the university in any way must be first referred to the president, and by him to the board of regents, for final action.

While it is evident that in respect to three of the most important questions with which a governing board has to deal—namely, the division of power and initiative, the tenure of office, and academic freedom—the policies of the board of regents of the University of Nevada have been essentially sound, there are other directions in which the board is obviously open to criticism. During the administration of a former president the board saw fit to separate the financial from the educational administration of the university, placing the former in the hands of the comptroller (under the general direction of the board) and exempting that official from responsibility to the president.² The president has thus not only been deprived of authority in fiscal matters, but has even to some degree, by force of circumstances, been in ignorance of the current status of the various funds by which the educational work of the university is supported.

In a recent survey of the higher institutions of Iowa the Bureau of Education came in contact with a similar provision for separating the presidents³ from direct contact with institutional finances. The committee quotes the comment of the bureau on this practice:

To one unfamiliar with the actual internal workings of an American State university it may seem wholly practicable to divorce the educational supervision from all fiscal control, and, as already indicated, this has more than once been suggested. But to persons cognizant of the actual circumstances the practicability of this plan seems open to grave doubts. Not only must there be some one whose judgment in educational matters can be trusted when expenditures for wholly new enterprises are at issue; there must also be some authority who shall determine the thousand and one questions of detail in

¹ The committee notes that the phraseology of this paragraph is not so clear as might be wished.

² The president and the board of regents have, however, prepared the general budget.

³ In Iowa three State institutions are governed by a single board, which employs a finance committee to handle financial matters.

expenditure within the limits of a general budgetary program. For example, who shall determine whether, of \$2,000 available in general funds, the department of botany shall be allowed to purchase certain desired and perhaps essential additions to its equipment or instead of this the department of history be permitted to make indispensable additions to its library? Only one can be done at a time. Questions of this kind under any budgetary system are constantly coming up in the larger institutions, and it seems somewhat obvious that an intelligent college president is more likely to reach a decision based on a just consideration of the educational issues involved than any layman, however well intentioned. Illustrations of the same type might be repeated indefinitely.

The committee found that the conditions suggested in this paragraph had been to a certain extent realized at the University of Nevada. Budgets made with sincere intentions have repeatedly been broken. Heads of departments have been uncertain of the amounts of their departmental appropriations, uncertain whether unexpended balances in their favor would still be available in the latter part of the fiscal year, uncertain which official should be approached for funds to carry on needed departmental work. Nearly every department head interviewed by the committee reported these difficulties and complained especially of the instability of departmental budgets. Confusion has reigned, not altogether unmixed with distrust.

Perhaps a still more serious mistake of the board has been its recent apparent unwillingness to answer legitimate inquiries regarding the university policies and finances. The committee has already referred to the consequences of this attitude. (See p. 8.) A particular instance occurred during the current year when the board declined to answer a series of questions concerning the financial management and educational policy of the institution addressed to it by a daily newspaper in the State.

The committee can understand the board's very natural reluctance to publish such a circumstantial account as was requested of the salaries and traveling expenses of the university officers and of other incidental expenses of the institution; nevertheless, the committee is convinced that the board should have furnished the statement. Subsequent developments would seem to confirm the committee's opinion that, in the long run, less harm would result from full publicity, however objectionable, than from an apparent desire to keep any facts concealed. The committee believes that the case under discussion has aroused so much public interest in the State as to justify specific mention in this report. It also desires to state emphatically that its investigation disclosed no evidence that the board's management of the matters concerning which questions were asked was unbusinesslike or prejudicial to the best interests of the institution. For the enlightenment of those citizens who have perhaps entertained a different opinion, it publishes in the Appendix (p. 137) the inquiry, the board's rejoinder, and the answers to the questions raised which had been prepared by the university officers and which were submitted to the committee at its

request. The committee was furnished also with copies of other supporting evidence, pay rolls, etc., which confirmed the officers' statements, but which it judges unnecessary to print.

The board's failure to give sufficient publicity to its financial transactions seems to have been in part due to its earlier mistake of separating the educational from the financial management of the university. The comptroller's office developed a system for recording the fiscal operations of the university which was not designed to facilitate the furnishing on short notice of information on any particular phase of the institution's activities. The board realized this defect, and in the summer of 1916 sought the advice of the comptroller of the University of Illinois with a view to installing a new system of accounting. The system proposed and since adopted by the board is in harmony with recommendations of the Association of Business Officers of the State Universities and Colleges of the Middle West, and represents in general a thoroughly approved form for the conduct of a university comptroller's office. Its distinguishing feature is complete budget control. With such a system the executive may know at all times the exact status of every fund and of the university finances as a whole. Under it the responsibility for the financial as well as for the educational management of the institution is restored to the president, to whom it properly belongs. At the time of the committee's visit the books of the university were being audited preparatory to the installation of the new system, which was to be put in operation, so the committee was informed, in January, 1917.¹ The committee's comments on the details of the system, with certain minor criticisms, appear in Chapter IX. Its general indorsement of the plan may be recorded here. With this instrument, and the committee believes with its changed intentions, the board will be in a position to meet the demand for greater publicity of university transactions.

The committee desires to refer to one other matter which perhaps may not properly be described as a policy of the board, yet in which the board's actual procedure may from time to time bear some of the aspects of a deliberately adopted policy. Under the law the board's freedom of choice is limited in one of the most important of its functions, namely, the selection of the president of the university. The section of the act specifying the powers and duties of the board was quoted at the beginning of this chapter. The paragraph relating to this matter is so extraordinary that it is worth re quoting here:

Fifth. To appoint a president of the university who shall have a diploma from some recognized college of learning of good standing or some State normal school, who

¹ In connection with this change in the system of accounting an extraordinary accusation was brought to the committee's attention. It was asserted that the transfer of items from one set of books to another was a device to cover financial obliquity, and that the old books were then to be burned. The committee can only point out that this preposterous suspicion is one more of the fruits of the board's reticence.

has had at least five years of practical experience as an instructor, who is familiar with the modern methods of imparting instruction generally approved in the United States, and who shall be indorsed as to moral character and qualifications as an instructor by the president and faculty of three institutions of learning authorized by law to confer degrees.

The only explanation which the committee can see for the inclusion in the act of such a prescription is that the earlier legislators who passed the act did not trust future boards of regents to use due diligence and precaution in choosing a university executive. In effect the law, if strictly observed, takes the selection of the president out of the board's hands. The committee judges, moreover, that the terms of it would generally be exceedingly difficult to fulfill. Aside from men of the first eminence in the educational world, men for the most part occupying commanding positions and so beyond the reach of new offers, the committee believes there are not perhaps at any one time more than a small handful of individuals in the entire country who could secure the indorsement of three faculties to their candidacies for the position of president of the University of Nevada. Members of university and college faculties, in the committee's experience, are extremely cautious in giving recommendations. They feel that they must personally be able to vouch for any person to whom they give approval. It is evident that few men could be sufficiently well known to three faculties to secure their intelligent indorsement, and if the indorsement is merely perfunctory it is of course worthless.

If the committee's estimate of the number of candidates who could at any time meet the terms of the law is too conservative, it is still convinced that on other grounds such a prescription is very unwise. The qualifications which make a good president, especially of a small institution in a State like Nevada, may be the product of quite other influences than the somewhat nomadic experience demanded by the law. The committee can conceive that a small State university in a State which is still to be developed might, under certain circumstances, be well served by a young man who could come to it in a spirit of consecration and enthusiasm, prepared to devote his life to it, to grow up with it, to help build a State, with all a young man's ardor for such a task. The committee can conceive that the board might find an individual possessing all the rarer qualities essential to a good executive and an educational leader, and yet, under the terms of the present law, not be able to appoint him.

The committee suggests that limitation of any sort upon the freedom of the board in making appointments is highly undesirable, and it ventures to repeat its dictum, expressed earlier in the report, that the people of the State should take pains to provide for the manage-

ment of the university by competent representatives, should give them full freedom of action, and should then hold them strictly responsible for the success of the undertaking. In accordance with this conviction, the committee recommends that, if the board is reorganized as proposed, the provision that the president must be indorsed as to moral character and qualifications as an instructor by the president and faculty of three collegiate institutions be not included in the law defining the powers and duties of the board of regents.

In the following chapters the committee takes up the work of the university, its relation to the State, and important phases of its internal management.

SUMMARY OF RECOMMENDATIONS.

1. The change of the system governing the selection of the board of regents and the creation of a board of seven members, to be appointed by the governor and confirmed by the senate, for terms of eight years.

2. In case the system is changed as indicated, the abolition of the prescription requiring the person appointed as president of the University of Nevada to be indorsed by the president and faculty of three collegiate institutions.

Chapter III.

HIGHER EDUCATION IN NEVADA AND THE FACTORS WHICH CONDITION IT.

It is the purpose of this chapter to indicate the general relationship of the University of Nevada to the State. The development of a State university and the character of the instruction that it offers are conditioned in a peculiar degree by the social needs of the State in which it is located and by the facilities for secondary training which the State affords. In a certain sense there is and can be no common type of State university, nor even an ideal State university, apart from its environment. Every State university is more or less the product of local conditions and local exigencies. This fact accounts in large measure for the great variations among American State universities. Apparently these variations are not accidental and temporary, but permanent and essential. They do not of course necessarily affect standards of educational work. It may be possible in time to establish a single national standard for higher education. Indeed, such a standard is being constantly more closely approximated. The variations represent rather differences of organization and method brought about by the different types of service demanded. The obligation therefore clearly rests on State university officials to effect as close a correlation as possible between the offerings of the university and the needs of its constituents. The outside investigator who is called upon to estimate the wisdom of a State university's policies and the efficiency of its management must also study the field of the university; that is, the State.

THE STATE OF NEVADA.¹

Certain uncompromising characteristics of the State of Nevada at once demand consideration. Their influence on the evolution of education, both higher and secondary, has been determinative; they will doubtless continue to affect it. Nevada is sixth in land area and forty-ninth in population among the States and Territories of continental United States. The rainfall throughout the State is for the most part insufficient for the growing of crops, without irrigation,

¹ The statistical material relating to industries and population in this chapter is taken from the Thirteenth Census of the United States, Statistics of Nevada; and Vol. IV, Occupation Statistics, Abstract of the Thirteenth Census, unless otherwise noted.

and there is little undeveloped water power. The State is crossed from north to south by a series of high mountain ranges, with broad arid valleys between. The slopes of the mountains offer pasturage for live stock. Owing to the scarcity of water, but 3.9 per cent of the land area of the State is devoted to farms (census figures of 1910), and this includes the large ranches using the public domain for grazing purposes. Approximately 1 per cent of the area of the State is irrigated. This constitutes 93.3 per cent of the land in farms which is reported by the last census as improved. Nevertheless, about 75 per cent of the land devoted to farming is not irrigated and, as has just been indicated, for the most part not improved. This land is used chiefly for grazing. The greater portion of it does not appear to be susceptible of irrigation. Crop production under irrigation is abundant. The approximately three-fourths of a million acres of improved farm land yielded in 1909 (the last census figures available) crops valued at nearly \$6,000,000. Seventy per cent of these crops, however, were hay and forage, i. e., crops used largely for the support of live stock.

These facts should be associated with the following. Of the somewhat more than \$60,000,000 reported as the value of farm property in 1909, about one-third was represented by live stock. The average number of acres in a farm was 1,009.6, and the average value of individual farms was \$22,462. The farms other than those used almost exclusively for grazing purposes, however, are not on the average very large. The inclusion of the large ranches, often 50,000 to 100,000 acres in extent, accounts for the high average acreage per farm for the State. In spite of the small proportion of the area of the State devoted to agricultural purposes, agriculture is one of the two major industries, as regards both the value of the investment and the number of persons engaged (see figure on p. 41). It has increased rapidly in magnitude, as is indicated by the fact that in the period from 1900 to 1910 the increase in the total value of farm property was 110.6 per cent. Nevertheless, agricultural operations have been and apparently will for a long time continue to be preponderatingly those concerned with the raising of live stock. Not only the climate and topography of the State, but also the present ownership and control of agricultural lands, tend to foster this branch of agriculture.¹ Tenant farming, it should be noted, is as yet little practiced. All but 12.4 per cent of the farms were in 1910 operated by owners or managers.

The other major industry is mining. Nevada is in fact one of the principal mining States of the country. The Comstock lode, the

¹ The further development of intensive agriculture as practiced on irrigated lands is urgently needed. On the products of such agriculture the urban and village communities largely depend.

extraordinary deposits at Tonopah, Goldfield, and other places have yielded hundreds of millions of dollars in gold and silver, a product, it might be remarked in passing, which has largely been carried out of the State and of which the State has never received its just tithe. Statistics several years old are particularly unsatisfactory as relating to an industry subject to such rapid fluctuations as mining. The latest census returns are for the year 1910, just after the mining boom of 1907. Since then the industry has suffered a considerable depression and has latterly begun to recover. In spite of their antiquity, however, certain of the figures of the 1910 census may serve to give a general idea of the extent of mining operations. In that year there were 1,021 mines and quarries, in which an aggregate of \$156,607,108 was invested. The number of persons engaged in the industry was 8,785¹ and the total reported value of the product \$23,271,597. It is commonly asserted by those qualified to speak that only a small fraction of the mineral resources of the State has thus far been exploited.

As against the extent of agriculture and mining the manufacturing industries of the State are comparatively small. In 1909 there were but 177 manufacturing establishments, involving a capital of \$9,807,000. The number of persons engaged was 2,650,² and the total value of the product \$11,887,000, of which but \$3,521,000 was added by the manufacturing process.

Physical characteristics and the types of industries whose development they permit naturally determine in large degree the size and distribution of a State's population. The population of Nevada was 81,875 in 1910. Since 1870, the first census year subsequent to the admission of the State to the Union, the population has undergone extraordinary fluctuations. Between 1900 and 1910 it increased about 93 per cent. The estimated fluctuations in this 10-year period, together with age and sex distribution of the population (Indians excluded), are presented in the table published below:³

¹ Compare figure on p. 41. The discrepancy between the number just given of the persons engaged in mining and the number on which the figure is based is due to the fact that the occupational statistics collected by the census include all individuals who report a given occupation as their means of livelihood whether or not they are employed in it at the time of the enumeration. The statistics of the mining industry from which the figures above are drawn record only the number of persons actually engaged in mining during the census year.

² Compare figure on p. 41. The category manufacturing and mechanical industries used as the basis for the figure includes carpentering and other outside occupations. The manufacturing industries alone are referred to in the text above.

³ The table and notes were prepared by Prof. R. Adams, of the University of Nevada. The estimate for the year 1906 differs widely from the estimate reported by the United States Bureau of Census, the latter being based on the rate of increase in the preceding decade. Prof. Adams also estimates the increase between 1910 and 1914 at approximately 5 per cent instead of the 20.58 per cent reported by the census.

TABLE 2.—*Estimate of the growth of population of Nevada, 1900-1910 (Indians excluded).¹*

Population, by ages.	1900, census.	1904, estimate.	1905, estimate.	1907, estimate.	1910, census.	Per cent of increase in decade.
All ages and both sexes.....	37,119	50,000	60,000	85,000	76,646	106
Males of all ages.....	22,911	34,000	41,000	58,000	49,918	118
Females of all ages.....	14,208	16,000	19,000	27,000	26,728	88
Males 21 years and over.....	16,139	26,500	33,000	48,000	35,499	138
Males under 21 years.....	¹ 6,772	7,500	8,000	10,000	* 11,419	41
Females 21 years and over.....	¹ 7,097	9,400	12,200	18,500	16,629	116
Females under 21 years.....	¹ 6,511	6,600	6,800	8,500	* 10,099	55
Males 6 to 20 years.....	4,765	4,800	5,000	7,000	7,811	63
Females 6 to 20 years.....	4,301	4,200	4,500	6,000	6,747	56

¹ Children 10 to 14 years of age constituted 22.1 per cent of all persons in Nevada 5 to 19 years of age, as against 24.1 per cent for the United States. The evidence of an increase in population, so far as found in statistical form, is not of a character to permit of an estimate of the highest degree of accuracy.

The reports of the State comptroller show that the receipts from gaming licenses increased as follows: 1900, \$5,663; 1904, \$11,633; 1905, \$29,462; 1907, \$36,061. The growth in receipts constitutes very good evidence of the increase in population, and it is an indication of the homeless and migratory character of many of the workers. We can not, however, assert the existence of any constant ratio between gambling games and population.

The total assets of all national banks experienced a marked increase, as follows:

1900.....	\$549,000	1908.....	\$6,281,000
1901.....	614,000	1909.....	9,630,000
1902.....	640,000	1910.....	10,661,000
1903.....	794,000	1911.....	10,070,000
1904.....	1,637,000	1912.....	11,469,000
1905.....	2,136,000	1913.....	10,895,000
1906.....	3,137,000	1914.....	9,867,000
1907.....	9,086,000	1915.....	10,179,000

The school census reports are of considerable value in determining the population of school age, 6-18 years, but allowance must be made for the fact the numbers given before 1908 were too large, because of an effort on the part of some districts to get more than their fair share of the distributive school moneys. Because of the lack of efficient school supervision the reports of school enrollment are defective, but the error is in the opposite direction; too small a number of children were reported. The report for 1908 as compared with that of 1907 show a decrease in the number of school census children amounting to 1,038, and at the same time the reports of teachers showed an increase in enrollment amounting to 2,220. The new supervision system had reduced the number of census children by stopping fraudulent counting, and there was a full count on the enrollment. According to reports, the enrollment of 1907 was equal to 57 per cent of the number of census children, and in 1908 the enrollment rose to 81 per cent.

The vote for candidates for Congress affords a basis for estimating population, and there is an approach toward a constant ratio between the number of votes and the population, but this ratio is not to be relied upon implicitly. In periods of very rapid gains in industrial activity men move about so much that they may fail to gain a voting residence, or they may fail to develop an interest in elections such as to bring out a full vote. Our vote in relation to the number of adult males is always small, and in periods of great business activity it is unusually small. Consequently a migration of a few thousand adult males from the State in a time of reduced activity is not accompanied by a reduction of the vote in corresponding measure.

The vote for candidates for Congress 1900-1910 was as follows: In 1900 it was 10,165 votes, in 1902 it was 10,921, in 1904 it was 11,398, in 1906 it was 14,236, in 1908 it was 23,801, in 1910 it was 20,163.

² A few persons of unknown age are treated as minors.

Nevada had seven incorporated cities in 1910, only two of which, Reno and Sparks, came under the census definition of a city, i. e., a place having 2,500 inhabitants or more. The smallest of these incorporated places, Searchlight, had a population of 387. The aggregate population of the seven cities was 19,698, or 24.1 per cent of the total population of the State. The designation of only incorporated places as cities, however, does not adequately represent the distribution of Nevada's population between urban and rural territory. Several very small places were incorporated, and two of the three largest towns were not. The population of the larger towns was as follows:

Reno.....	10,967	Carson City.....	2,468
Goldfield.....	4,838	Virginia City.....	2,244
Tonopah.....	3,900	Ely.....	2,055
Sparks.....	2,500	Winnemucca.....	1,786
		Caliente.....	1,755
Towns of 2,500 or more.....	22,105	Elko.....	1,677
		Towns with less than 2,500.....	11,063

TABLE 3.—*Per cent of urban population.*

	Aggregate population.	Per cent of total population.
Towns having a population of 2,500 or more.....	22, 105	26.9
Towns having a population of less than 2,500 and more than 1,500.....	11, 983	14.7
Total.....	34, 088	41.6
Population of State.....	81, 875	

According to the census calculation Nevada is chiefly a rural State. Actually, however, a rather small percentage of its inhabitants live in farm communities. The majority live in small towns. It is estimated, for example, that about 12 per cent of the children of school age reside in farm districts. Over half are found in the 10 leading towns, and most of the remainder in the other towns and villages. In this respect the conditions of the State are unique. It should also be noted that no large cities are located close to its borders in other States. These facts have an important bearing on the whole educational system, as will later be apparent.

Certain large generalizations concerning the character of the population are also of moment. The accompanying graph (figure 1) shows the distribution among various pursuits of the persons engaged in gainful occupations in 1910. Figures 2, 3, and 4 show the similar distribution in groups of neighboring States, of Middle Western States, and of Eastern States. The following table gives the per cents of the population of Nevada and of the United States engaged in the different kinds of occupations.

TABLE 4.—*Persons 10 years and over engaged in gainful occupations in 1910.*

Occupations.	Nevada.	United States.
	Per cent. 100.0	Per cent. 100.0
Total.....		
Agriculture, forestry, and animal husbandry.....	18.5	32.2
Extraction of minerals.....	21.9	2.5
Manufacturing and mechanical industries.....	17.0	27.9
Transportation.....	11.4	6.9
Trade.....	7.6	9.5
Public service (not elsewhere classified).....	1.4	1.2
Professional services.....	5.5	4.4
Domestic and personal services.....	12.7	9.9
Clerical occupations.....	3.0	4.6

Figure 5 represents the racial composition of the population of Nevada, both the gross numbers and the percentages of each group being shown.

Still more significant for its bearing on education is the following table showing the age distribution in 1910 of the population of

Nevada, of the population of the United States, and of the population of Arizona, Utah, Colorado, and New Mexico combined. Figure 6 represents a comparison of Nevada and the United States with respect to the age distribution of the population.

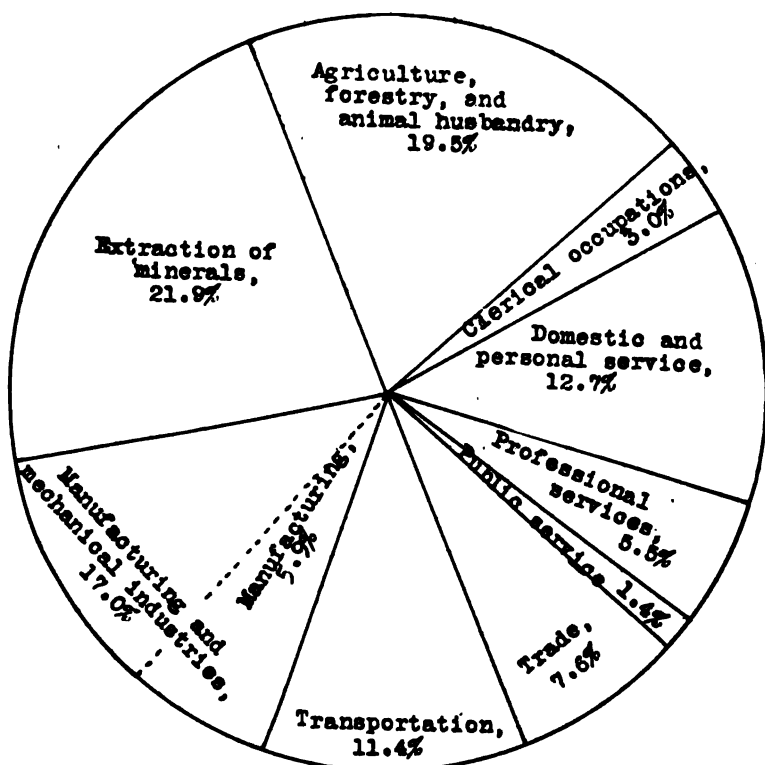


FIG. 1.—Distribution of persons engaged in gainful occupations in Nevada, 1910.

TABLE 5.—Age distribution of total population, 1910.

	Nevada.		United States.	Arizona, Utah, Colorado, and New Mexico.	
		Per cent.	Per cent.		Per cent.
Total.....	81,875	100.00	100.0	1,704,030	100.00
Under 5 years.....	6,383	7.80	11.6	206,323	12.06
5 to 14 years.....	10,606	12.99	20.5	346,691	20.34
15 to 24 years.....	13,301	16.20	19.7	326,111	19.13
25 to 44 years.....	33,717	41.20	29.1	526,060	30.87
45 to 64 years.....	14,224	17.40	14.6	240,490	14.11
Over 64 years.....	3,644	3.80	4.3	54,376	3.24

Two other sets of figures are also worthy of record. In 1910, of the total population 10 years of age and over, 6.7 per cent was illiterate.¹ In the total population of the State there were in the same

¹ This includes the Indians, a racial group that contains a high percentage of illiterates.

year 55,551 males and 29,324 females, or 179.2 males to 100 females. In the urban population there were 133.1 males to 100 females, and in the rural 190.4.

From the foregoing a number of interesting conclusions immediately detach themselves. With respect to population and industries Nevada still exhibits the characteristics of a frontier State. Its vast territory supports but a handful of people. These are chiefly native whites, and the majority of the foreign-born come from the hardy adventurous stocks of northern and western Europe. The inhabit-

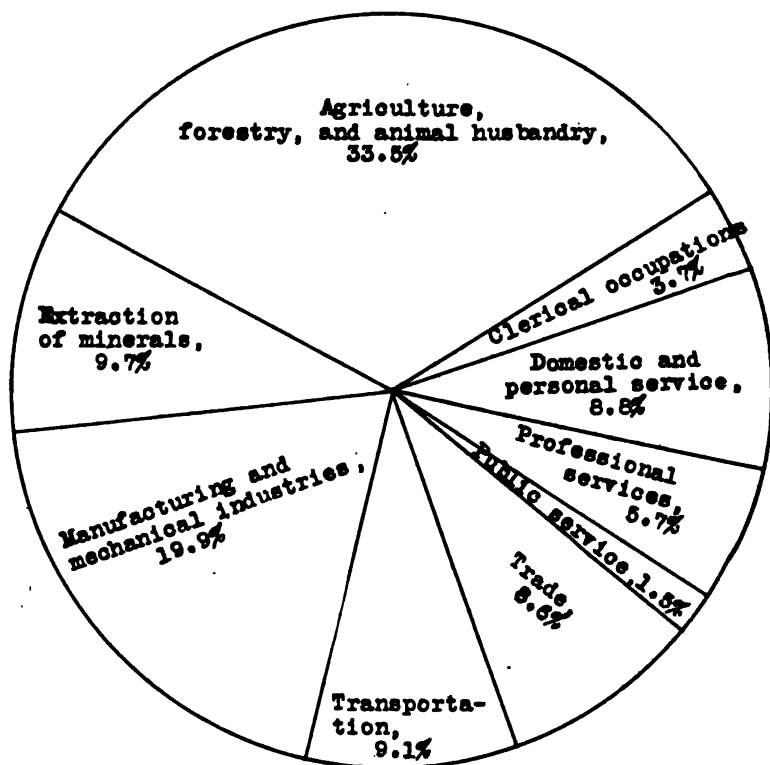


FIG. 2.—Distribution of persons engaged in gainful occupations in Utah, Colorado, Arizona, and New Mexico combined, 1910.

ants are moreover preponderatingly in the prime of life and preponderatingly males. This makes possible a high degree of productive power as compared with the number of persons to be supported and the number of children to be educated. The percentage of children is unusually small. The people are widely scattered, living for the most part in small isolated communities and mining settlements. The few cities are principally distributing centers, and with the exception of Reno have shown little stability of population. The two dominant industries, grazing and mining, are frontier industries.

The latter especially, owing to its rapid and unforeseen fluctuations, leads to a constant shifting from place to place of those engaged in it. There has been of late, however, a tendency toward a steady increase in population. Apparently the continuance of this tendency will depend to a great extent on the discovery and exploitation of further mineral resources and upon the development of agricultural pursuits apart from the production of live stock.¹ Such agricultural develop-

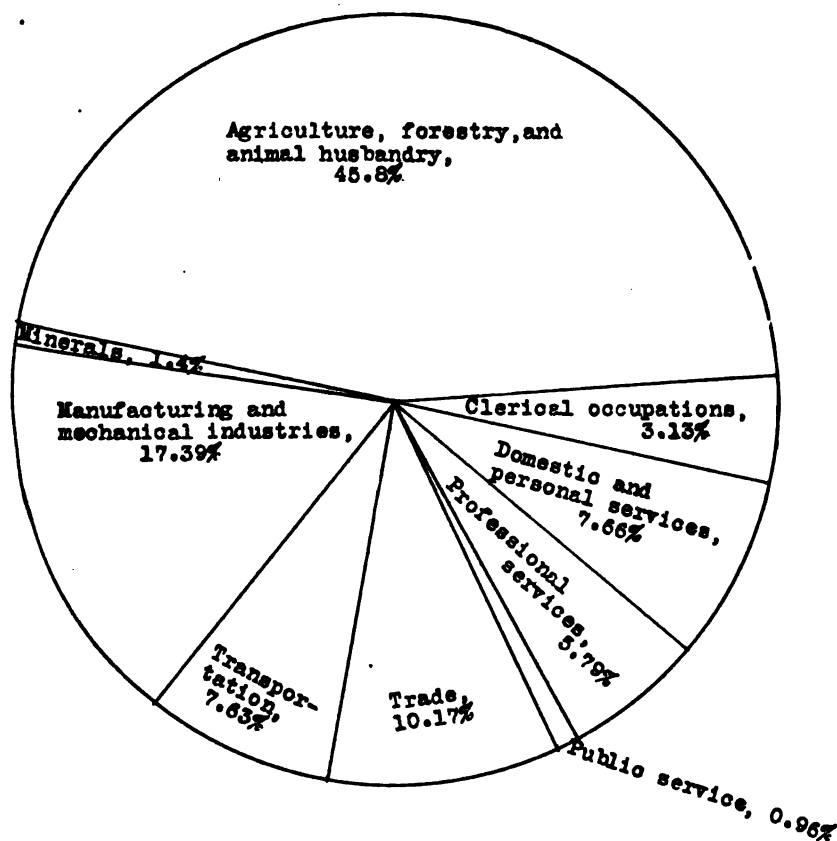


FIG. 2.—Distribution of persons engaged in gainful occupations in South Dakota, Nebraska, and Iowa combined, 1910.

ment is only possible with the aid of irrigation or through the evolution and spread of new types of farming which are as yet little or not at all practiced.

It seems manifest that the organized public effort of the State must for a long time to come be focused on the full development of its natural resources. This purpose should constantly inform legislation. It should be one of the principal aims of education.

¹ The great cattle and sheep raising industries require but few people. Their further development will not materially increase the population.

The State needs both practical farmers and trained agriculturists. It needs mining engineers, civil, mechanical, and electrical engineers. As will later be emphasized, it greatly needs teachers, not only to spread the knowledge of those practical arts and technical processes involved in the occupations of rural and mining communities, but quite as much to help enrich and interpret life in environments where of necessity the pressure of material things is severe. On the other hand, the State has no large immediate need for members of the so-called learned professions, for highly trained business adminis-

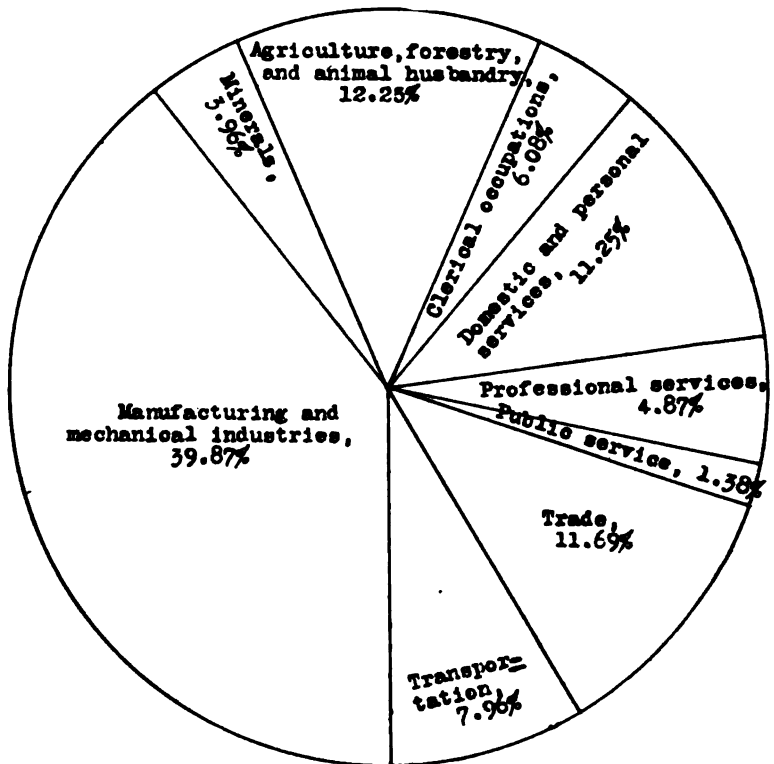


FIG. 4.—Distribution of persons engaged in gainful occupations in New York, Pennsylvania, New Jersey, and Ohio combined, 1910.

trators, or for practitioners of various of the less common higher technical branches. The numbers of these persons in the total population are always small, and the present requirements of the State can be met by training agencies already established in other sections of the country.

SECONDARY EDUCATION IN NEVADA.

The commission created by the State legislature in 1915 to survey the educational institutions of the State—and at whose request the Bureau of Education has made the present study—will report

in detail on the secondary schools of Nevada. The brief summary offered herewith is presented in order that the university may be seen in its educational setting. State-supported higher institutions belong to the State system of public education. Their connection with the secondary schools of the State is close and definite. The character of the courses which they offer to entering students is

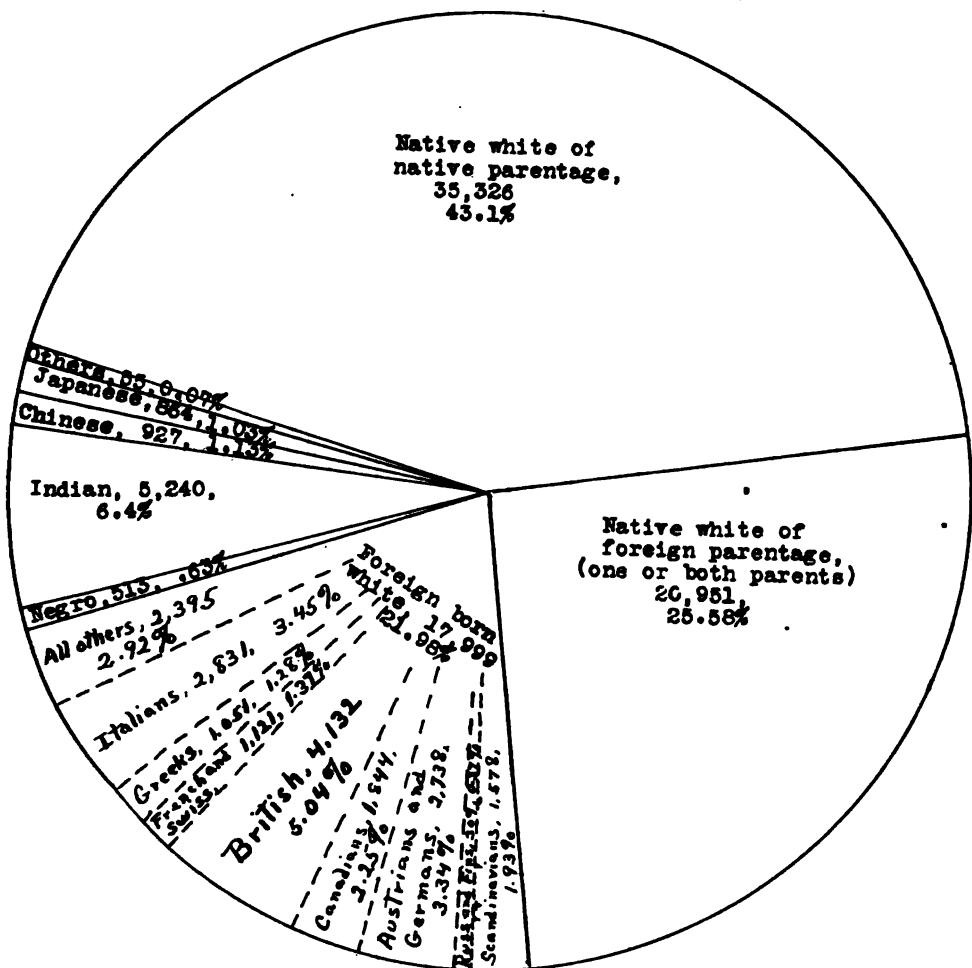


FIG. 5.—Racial composition of population.

largely determined by the work of the secondary schools. As a rule the great majority of their students are drawn from these schools. To be fairly estimated, therefore, they must be viewed against the background of the secondary schools.

Secondary education in Nevada exhibits one unique peculiarity—it is wholly public. The difficulties under which secondary schools

have been established and maintained have also been extraordinary. The facts adduced above concerning the topography of the State and the distribution of its population bear out this assertion. Nevertheless, the development of secondary school facilities in the last

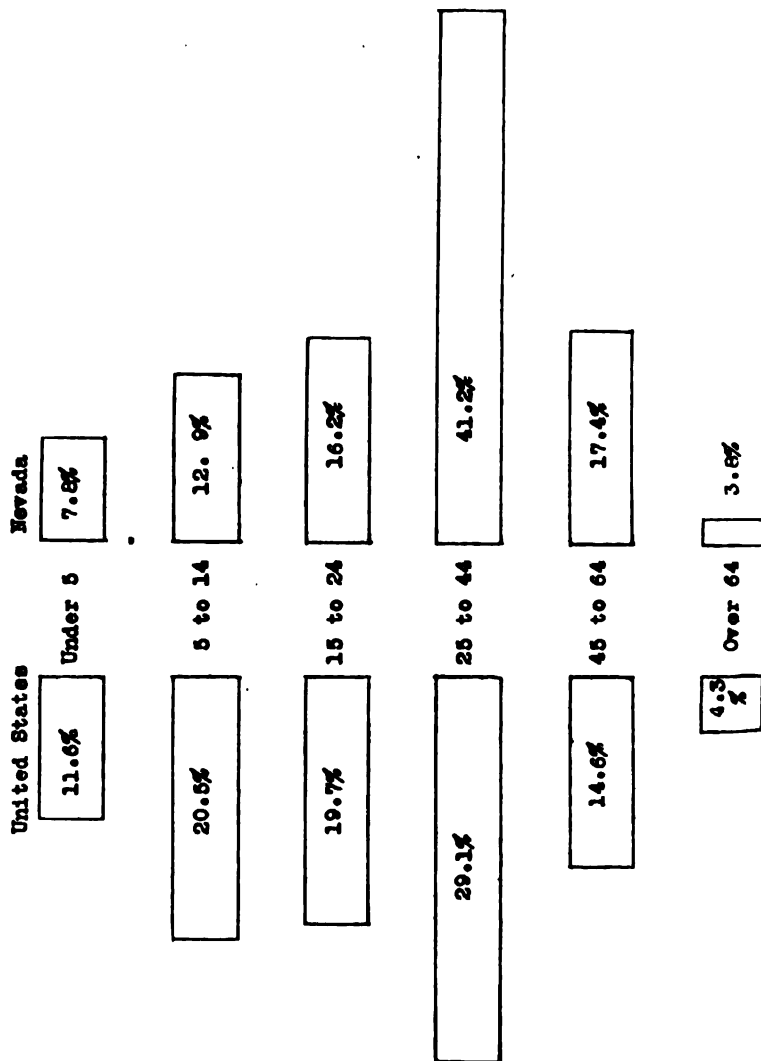


FIG. 6.—Age distribution of total population in 1910—Nevada compared with United States.

10 years has been exceptionally rapid. The following table shows the percentage of gain and loss in population, school population, and secondary enrollment from 1895 to 1914. A table showing growth in these three directions in 15 other States is given in the Appendix, p. 142.

TABLE 6.—*Percentage of gain and loss in population, school population, and secondary enrollment from 1895 to 1914.*¹[Figures in *italics* show per cent of loss.]

Years.	Population.	School population.	Secondary enrollment.
1895.....	43,010	9,408	322
1900.....	42,335	9,280	568
Per cent.....	<i>1.57</i>	<i>1.57</i>	76.09
1905.....	42,335	9,013	422
Per cent.....	0.00	<i>2.87</i>	<i>22.18</i>
1910.....	81,875	17,439	836
Per cent.....	93.39	93.48	96.10
1914.....	98,726	16,201	1,022
Per cent.....	20.58	<i>7.09</i>	<i>22.26</i>

Figure 7 illustrates graphically the facts presented in the table and shows also the growth in higher educational enrollments. Nevada does not rank particularly well with other Western States in the percentage of the whole number of pupils that is enrolled in secondary schools. Reference to the table on p. 41, however, will show that the age group including persons of high-school age is unusually small. Of the 11 Western States, 5 show a larger percentage of the whole number of pupils undergoing secondary education. But one shows a smaller percentage of the total population enrolled in secondary schools.²

Viewed from another angle Nevada's secondary school system bears a somewhat favorable comparison with those of other new and sparsely settled States. There were 19 four-year high schools in 1915-16. Seventeen of these were accredited by the State University.³ The entrance requirements of the university are standard in amount and scope. (See p. 69.)

The citizens of Nevada have faced great physical obstacles to the development of secondary education, but they appear already to have laid a sound foundation for a secondary school system. Incidentally it might be remarked that the cost both in money and in effort has been large. The State must look forward to even greater expenditures, however, before Nevada can have a fully developed system of secondary schools.

In reports made on other State systems of education the Bureau of Education has indicated by extending upward the enrollment

¹ The figures of population and school population are taken from the United States Census report. There are discrepancies between these figures and those in the table on p. 39, which are explained in the notes on the latter table. Secondary enrollment figures are obtained by the Bureau of Education through direct reports from the schools.

² Indeed Nevada has a smaller percentage of the total population enrolled in all types of educational institutions combined than any other State in the Union. The per cent is 12.6, as against 21.4 for the whole United States. This is chiefly due to the smaller proportion of children.

³ An accredited school is one whose standards and equipment have been approved by the agents of a higher institution (generally the State university) and whose graduates are accepted for entrance by that institution without examination.

curves the numbers that might be expected in schools and colleges at various future periods. While of course an accurate forecast of future enrollment can not thus easily be obtained, undoubtedly the

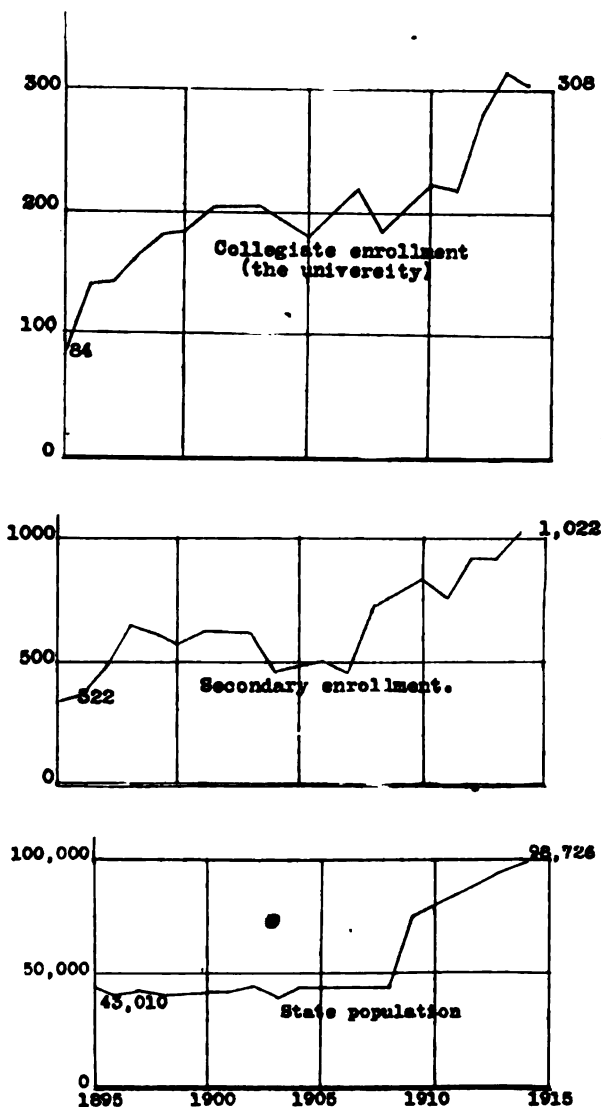


FIG. 7.—Population of Nevada—Collegiate and secondary enrollment.

general tendency is by this means rather vividly illustrated. Below are the curves of secondary school and collegiate enrollment projected from the year 1914 to the year 1925 (figure 8). It will be noted that the actual gain in secondary enrollment in the last two

years has been considerably greater than the number indicated by the projected curves for this period. The hypothetical enrollment

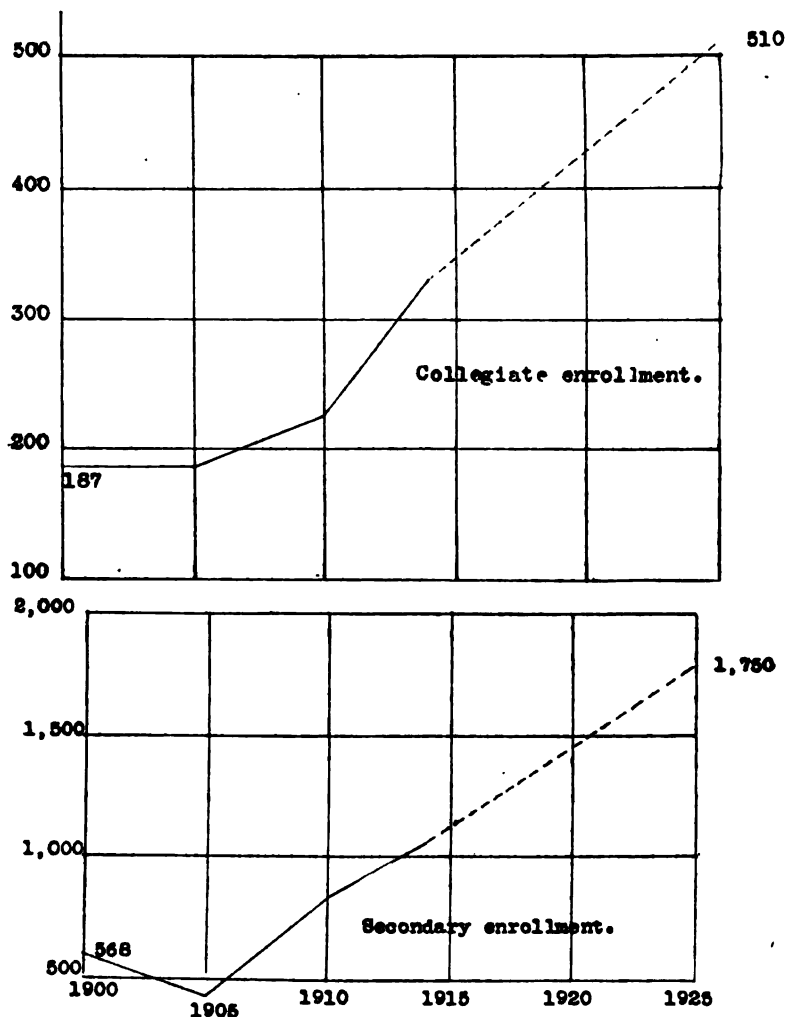


FIG. 8.—Collegiate and secondary enrollment, 1914 to 1925.

figure (1,750) for 1925, therefore, is probably a very conservative prophecy.¹

¹ The committee is not unaware of the fact that many other circumstances than those mentioned here will affect the size of secondary enrollments. Naturally the small percentage of persons under 24 years of age (in Nevada it is approximately 26 per cent of the total population, as against 51 per cent for the whole United States) is a retarding factor. The rate of growth in population often has a considerable influence also, although in the present stage of American education this influence is sometimes less than may be imagined. For confirmation of this statement the reader is referred to Bulletin, 1916, No. 19, pp. 17-23, and Bulletin, 1916, No. 26, pp. 25-30, Bureau of Education. In a State like Nevada movements in population and the development of transportation facilities are likely just now to have much more effect on secondary enrollments than even a large and unexpected increase in the number of inhabitants. Then, of course, the standards and traditions of new immigrants determine in large measure whether or not their children shall frequent high schools.

HIGHER EDUCATION IN NEVADA.

Nevada is one of five States in which the only institutions of collegiate rank are State institutions. In but two other States, however, Delaware and Wyoming, is all work above high-school grade, including teacher training, concentrated at the State university.¹

It is doubtless clear that a State with less than 100,000 population does not need and could not well support more than one higher institution. Indeed, if one has regard to the size of the population alone, it is amazing that Nevada has been able to maintain with credit a single institution of university grade. But, as will shortly be shown, the small number of people behind the institution has been offset by certain other factors.

The Bureau of Education has already several times noted ² that every higher institution exercises a strong magnetic pull on its immediate environment. The force of the attraction is much less strong at a distance. Many detailed studies of enrollments have shown that most colleges and universities draw the majority of their students from within a radius of 50 miles. Few institutions obtain any considerable percentage of their enrollments from outside a circle with a radius of 100 miles. (Maps on pages 79 and 80 will show that the University of Nevada is one of these few.) In view of this tendency, which is so well-nigh universal as to take on the appearance of a natural law, it is doubtless expedient to have State universities located rather close to the centers of population. Other things being equal, it would appear to be most convenient to have a State university somewhere near the center of the State. But few State universities are thus strategically placed and, in fact, in few Commonwealths is the population so distributed that the establishment of the State university in the center of the State would after all be most appropriate. In Nevada the location of the university at Reno, although the city is on the extreme border of the State, has been most favorable to the institution's growth. It has been able to serve much larger numbers of young people than would have been possible had it been situated anywhere else. Washoe, Storey, Ormsby, Lyon, and Douglas Counties are the most densely populated counties in the State, both as regards rural and urban inhabitants.

The committee believes that the State is to be congratulated on its settlement of two fundamental matters relating to the university. The first is the location of the institution. Secondly, the State has not separated its higher educational enterprise into several parts,

¹ Because of their flexible organization and slight enrollments, the teacher training classes, called county normal schools, are not reckoned as higher institutions.

² See also Gen. Educ. Bd. Rep., 1902-1914, p. 19 et seq.

as so many young and sparsely populated States have been led into doing, but it has kept all branches consolidated in a single institution, thereby preventing an expensive and irritating rivalry. The committee is aware that the separation of the college of agriculture, and its establishment in another part of the State, has been discussed, and that the plan still has a certain measure of public support. It ventures to advise emphatically against such a step. The separation of the State universities and the colleges of agriculture and mechanic arts in other States has thus far proved of doubtful advantage from the educational point of view.¹ In other respects it has been productive of jealousies, misunderstandings, political conflicts, and personal antagonisms which comport ill with the true spirit and purpose of higher education. A State which has not already on its hands the problem of adjustment between these two institutions may well avoid it.

SUPPORT OF HIGHER EDUCATION IN NEVADA AND OTHER STATES.

The measure of support which the University of Nevada is receiving is a matter of unusual interest both to the citizens of Nevada and to outside students of education. That a State of less than 100,000 population should be able to maintain a university at all is a source of some surprise to those who know no more about the State of Nevada than the size of its population. The figures presented in the accompanying tables and documents should make plain whether or not the State has been unduly burdened by having the institution at its charge.

In these tables the expenditures for both private and public higher education are included. In many of the older States higher education has been left largely to private initiative and is endowed and supported for the most part by private benefactions. Nevertheless, the institutions on private foundations are as truly public agencies for higher training as are State-supported institutions. The existence of them relieves the State of the necessity of providing similar facilities at public expense. Moreover, the fact should not be overlooked that to a large degree the citizens of the State pay for private as well as public institutions. The taxation for the support of private higher institutions may be so indirect and so distributed in time as to escape recognition, yet it is in a very real sense a fiscal burden which the citizens of the State must bear. On the other hand, States which have few or no private institutions must of necessity meet the demands of their people by the provision of public institutions. Allowing for variations produced by certain peculiar

¹ For a discussion of possible advantages, however, see Bulletin, 1916, No. 19, p. 48 et seq.

State conditions,¹ the following tables make possible a fairly reliable comparison of the generosity of the States in the matter of the support of higher education.

Table 7 shows the total wealth of the States in 1912, the amount spent for higher education in the following academic year, and the amount spent for higher education for each \$1,000 of wealth. Table

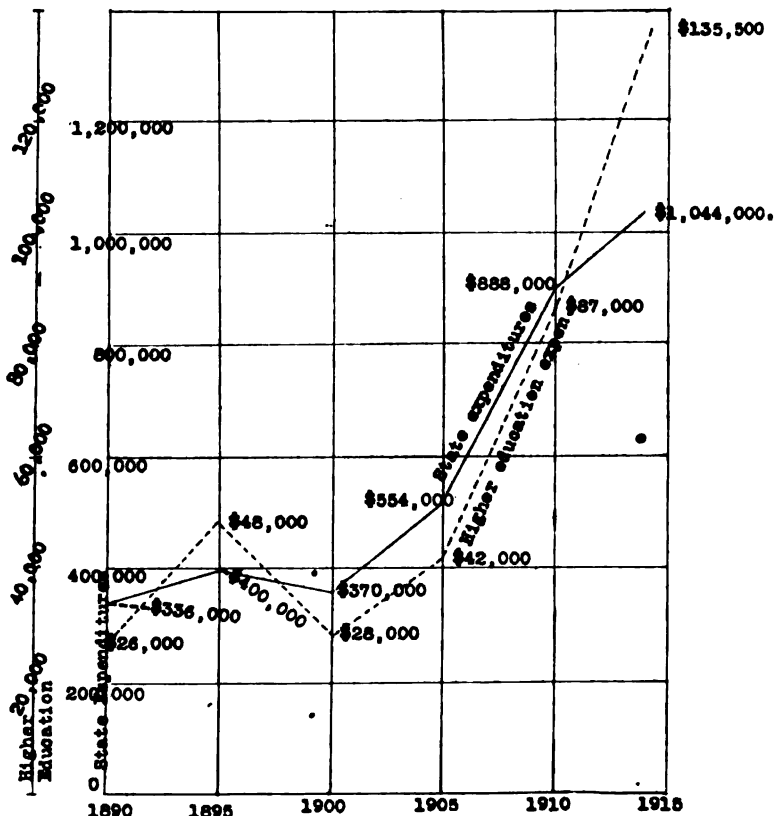
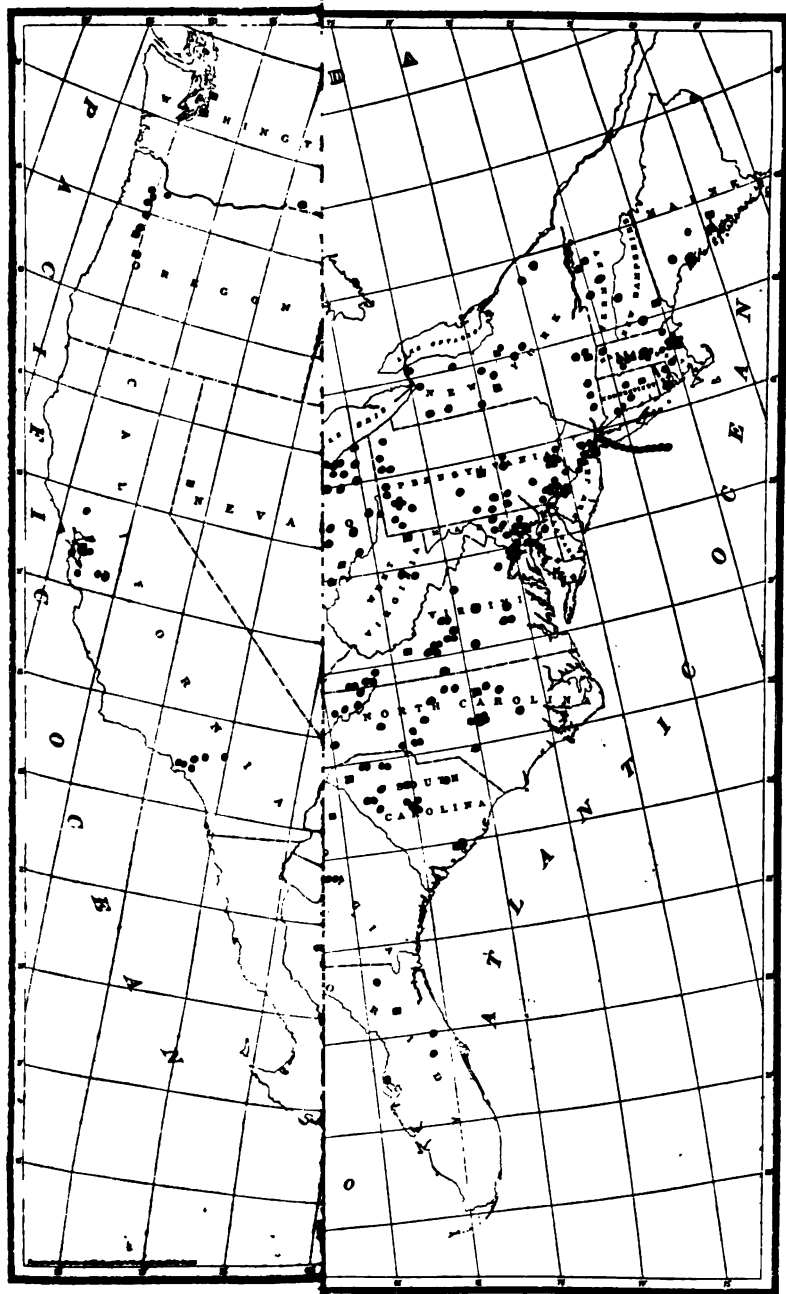


FIG. 9.—Total State expenditures, compared with expenditures for higher education, at the fixed ratio of 1 to 10.

8 shows the rank of the States with respect to the expenditure recorded in column 3 of Table 7. Table 9 shows the population of each State (census figures of 1910), the receipts of higher educational institutions, including normal schools, and the apportionment per capita among the citizens of the States of the receipts of higher institutions. Table 10 shows the rank of the States with respect

¹ For example, the high rank of Delaware in Tables 8 and 10 is due to the fact that the State in the year under consideration made large appropriations for the sound establishment of the State College. The high rank of Massachusetts in the same tables is not altogether significant, because Massachusetts contains many long-established wealthy institutions and in turn educates a large proportion of the young people of the whole Northeast.



to the per capita apportionment of the receipts of higher education (normal schools included). The accompanying map shows the location of universities, colleges, and technological schools in the United States.

Figure 9 indicates the relation which expenses for higher education in Nevada have borne to total State expenditures for the past 25 years. Throughout the United States State appropriations for higher education have grown steadily from year to year. In many States the proportion of the total State appropriations which is devoted to higher education has increased steadily also. In Nevada, it will be observed that the ratio between these two classes of expenditures has remained substantially constant.¹

TABLE 7.—Amount expended for higher education for each \$1,000 of wealth.

(Based on the estimated true value of all taxable property, United States Census, 1912, and total receipts of universities, colleges, and normal schools as shown in the Report of the Commissioner of Education.)

States.	Total wealth in 1912.	Spent for higher education, 1913-14.	Spent per \$1,000.
Alabama.....	\$2,050,000,000	\$1,323,000	\$0.65
Arizona.....	487,000,000	601,000	1.23
Arkansas.....	1,758,000,000	524,000	.30
California.....	8,023,000,000	5,458,000	.68
Colorado.....	2,286,000,000	1,142,000	.50
Connecticut.....	2,154,000,000	2,706,000	1.25
Delaware.....	294,000,000	1,142,000	3.88
Florida.....	1,015,000,000	449,000	.44
Georgia.....	2,299,000,000	1,407,000	.61
Idaho.....	591,000,000	417,000	.71
Illinois.....	14,596,000,000	9,774,000	.68
Indiana.....	4,951,000,000	2,089,000	.42
Iowa.....	7,437,000,000	3,815,000	.51
Kansas.....	4,394,000,000	2,327,000	.53
Kentucky.....	2,152,000,000	1,077,000	.50
Louisiana.....	2,057,000,000	1,122,000	.55
Maine.....	1,030,000,000	948,000	.92
Maryland.....	2,002,000,000	1,898,000	.96
Massachusetts.....	5,735,000,000	8,445,000	1.47
Michigan.....	5,169,000,000	3,799,000	.73
Minnesota.....	5,267,000,000	4,140,000	.79
Mississippi.....	1,306,000,000	1,140,000	.87
Missouri.....	5,546,000,000	2,314,000	.42
Montana.....	1,113,000,000	540,000	.48
Nebraska.....	3,605,000,000	1,842,000	.51
NEVADA.....	441,000,000	208,000	.47
New Hampshire.....	613,000,000	1,130,000	1.84
New Jersey.....	5,362,000,000	2,066,000	.39
New Mexico.....	502,000,000	301,000	.60

¹ Explanation of figure 9.—Items included in total State expenditures: State officers, judicial department, fish commission, State prison, State insane, deaf, dumb, blind, orphans home, State printing, States capitol grounds and buildings, weather service, special elections, district agricultural societies, State university, State militia, water, State library, interest on State debt, public schools, hospital for mental diseases, mines inspection, State police, sheep commission, irrigation, G. A. R., food adulteration, banking commission, bureau of industries, expositions, quarantine.

Items included in higher educational institutions: The State university. In 1914 there were expenditures for three normal training schools, but these have been omitted. The Virginia City Mining School is omitted. Included in expenditures for higher education are State appropriations for support, new buildings and equipment; interest on land-grant funds; and United States direct appropriations. Fees and earnings are omitted. Experiment station funds are omitted.

Source.—Report of State comptroller for the year.

Transfers seem to have been omitted from the comptroller's report and money spent for investment in bonds or for the redemption of Nevada State bonds is deducted.

TABLE 7.—Amount expended for higher education for each \$1,000 of wealth—Continued.

States.	Total wealth in 1912.	Spent for higher education, 1913-14.	Spent per \$1,000.
New York.....	\$21,913,000.00	\$16,139,000	\$0.74
North Carolina.....	1,745,000.00	1,644,000	.94
North Dakota.....	2,038,000.00	1,250,000	.61
Ohio.....	8,552,000.00	4,817,000	.56
Oklahoma.....	4,321,000.00	4,845,000	.19
Oregon.....	1,843,000.00	1,232,000	.67
Pennsylvania.....	14,137,000.00	7,673,000	.54
Rhode Island.....	893,000.00	503,000	.56
South Carolina.....	1,301,000.00	1,569,000	1.21
South Dakota.....	1,331,000.00	980,000	.72
Tennessee.....	1,834,000.00	1,461,000	.80
Texas.....	6,552,000.00	3,223,000	.49
Utah.....	735,000.00	515,000	.70
Vermont.....	797,000.00	482,000	.60
Virginia.....	2,175,000.00	2,980,000	1.37
Washington.....	3,055,000.00	1,954,000	.64
Wisconsin.....	4,282,000.00	5,428,000	1.27
Wyoming.....	345,000.00	193,000	.56
West Virginia.....	2,180,000.00	871,000	.39

TABLE 8.—Amount expended for higher education for each \$1,000 of wealth in order of rank, by States, 1913-14.

1. Delaware.....	\$3.88	25. North Dakota.....	\$0.61
2. New Hampshire.....	1.84	26. Georgia.....	.61
3. Massachusetts.....	1.47	27. Vermont.....	.60
4. Virginia.....	1.37	28. New Mexico.....	.60
5. Wisconsin.....	1.27	29. Ohio.....	.56
6. Connecticut.....	1.25	30. Rhode Island.....	.56
7. Arizona.....	1.23	31. Wyoming.....	.56
8. South Carolina.....	1.21	32. Louisiana.....	.55
9. Maryland.....	.95	33. Pennsylvania.....	.54
10. North Carolina.....	.94	34. Kansas.....	.53
11. Maine.....	.92	35. Iowa.....	.51
12. Mississippi.....	.87	36. Nebraska.....	.51
13. Tennessee.....	.80	37. Kentucky.....	.50
14. Minnesota.....	.79	38. Colorado.....	.50
15. New York.....	.74	39. Texas.....	.49
16. Michigan.....	.73	40. Montana.....	.48
17. South Dakota.....	.72	41. NEVADA.....	.47
18. Idaho.....	.71	42. Florida.....	.44
19. Utah.....	.70	43. Indiana.....	.42
20. California.....	.68	44. Missouri.....	.42
21. Illinois.....	.68	45. West Virginia.....	.39
22. Oregon.....	.67	46. New Jersey.....	.39
23. Alabama.....	.65	47. Arkansas.....	.30
24. Washington.....	.64	48. Oklahoma.....	.19

TABLE 9.—Per capita apportionment of receipts of higher educational institutions, 1913-14.

States.	Population.	Total apportionment.	Per capita.
Alabama.....	2,138,000	\$1,323,000	\$0.62
Arizona.....	204,000	601,000	2.94
Arkansas.....	1,574,000	524,000	.33
California.....	2,378,000	5,458,000	2.30
Colorado.....	799,000	1,142,000	1.43
Connecticut.....	1,115,000	2,706,000	2.43
Delaware.....	202,000	1,142,000	5.65
Florida.....	751,000	449,000	.60
Georgia.....	2,609,000	1,407,000	.54
Idaho.....	326,000	417,000	1.28
Illinois.....	5,639,000	9,974,000	1.77
Indiana.....	2,701,000	2,089,000	.77
Iowa.....	2,225,000	3,815,000	1.71
Kansas.....	1,691,000	2,327,000	1.38
Kentucky.....	2,290,000	1,077,000	.47
Louisiana.....	1,656,000	1,122,000	.68
Maine.....	742,000	958,000	1.28
Maryland.....	1,295,000	1,898,000	1.46
Massachusetts.....	3,366,000	8,445,000	2.51

TABLE 9.—*Per capita apportionment of receipts of higher educational institutions, 1913-14*
—Continued.

States.	Population.	Total apportionment.	Per capita.
Michigan.....	2,810,000	\$3,799,000	\$1.35
Minnesota.....	2,076,000	4,140,000	1.99
Mississippi.....	1,797,000	1,140,000	.63
Missouri.....	3,293,000	2,314,000	.70
Montana.....	376,000	540,000	1.44
Nebraska.....	1,192,000	1,842,000	1.54
NEVADA.....	82,000	208,000	2.53
New Hampshire.....	431,000	1,130,000	2.62
New Jersey.....	2,537,000	2,066,000	.81
New Mexico.....	327,000	301,000	.92
New York.....	9,113,000	16,139,000	1.77
North Carolina.....	2,206,000	1,644,000	.75
North Dakota.....	577,000	1,250,000	2.17
Ohio.....	4,767,000	4,817,000	1.01
Oklahoma.....	1,637,000	845,000	.51
Oregon.....	673,000	1,232,000	1.83
Pennsylvania.....	7,695,000	7,673,000	1.00
Rhode Island.....	543,000	503,000	.93
South Carolina.....	1,515,000	1,569,000	1.04
South Dakota.....	684,000	969,000	1.64
Tennessee.....	2,185,000	1,461,000	.67
Texas.....	3,897,000	3,223,000	.83
Utah.....	373,000	515,000	1.38
Vermont.....	356,000	482,000	1.35
Virginia.....	2,002,000	2,980,000	1.45
Washington.....	1,142,000	1,954,000	1.71
West Virginia.....	1,221,000	871,000	.71
Wisconsin.....	2,334,000	5,428,000	2.33
Wyoming.....	146,000	193,000	1.32

TABLE 10.—*Rank of States as to per capita receipts of higher educational institutions, including normal schools, 1913-14.*

1. Delaware.....	\$5.65	25. Michigan.....	\$1.35
2. Arizona.....	2.94	26. Wyoming.....	1.82
3. New Hampshire.....	2.62	27. Idaho.....	1.279
4. NEVADA.....	2.53	28. Maine.....	1.277
5. Massachusetts.....	2.51	29. South Carolina.....	1.04
6. Connecticut.....	2.43	30. Ohio.....	1.01
7. Wisconsin.....	2.33	31. Pennsylvania.....	1.00
8. California.....	2.30	32. Rhode Island.....	.93
9. North Dakota.....	2.17	33. New Mexico.....	.92
10. Minnesota.....	1.99	34. Texas.....	.83
11. Oregon.....	1.83	35. New Jersey.....	.81
12. New York.....	1.770	36. Indiana.....	.77
13. Illinois.....	1.768	37. North Carolina.....	.76
14. Iowa.....	1.714	38. West Virginia.....	.71
15. Washington.....	1.711	39. Missouri.....	.70
16. South Dakota.....	1.64	40. Louisiana.....	.68
17. Nebraska.....	1.54	41. Tennessee.....	.67
18. Maryland.....	1.46	42. Mississippi.....	.63
19. Virginia.....	1.45	43. Florida.....	.60
20. Montana.....	1.44	44. Alabama.....	.57
21. Colorado.....	1.43	45. Georgia.....	.54
22. Kansas.....	1.38	46. Oklahoma.....	.51
23. Utah.....	1.38	47. Kentucky.....	.47
24. Vermont.....	1.35	48. Arkansas.....	.33

Attention is here especially called to the fact that Nevada ranks forty-first in Table 8, on the basis of the amount spent on higher education for each \$1,000 of wealth. It is evident that, while the State is paying a large amount for its university per capita of its population (as is indicated in Tables 9 and 10), actually the institution constitutes a relatively slight drain on the total property of the State,¹ and it is of course the relation of the expenses of the university to the

¹ Other illuminating tables showing the resources available for all educational purposes appear in the Appendix, pp. 143 et seq.

taxable—and taxed—resources of the State that is significant.¹ Further confirmation of this conclusion is found in the mill-tax rate by which the university is supported. This is considerably lower than the rates of many other States. While Nevada has done well, therefore, being a State of small population with many urgent demands for its public funds, to develop and maintain a university of reputable grade, the university has not been a very considerable burden. The State has been less liberal in its support than many other States have shown themselves to be toward the institutions of their creation.

HIGHER EDUCATIONAL ENROLLMENTS.

The summaries of secondary and higher enrollments and the estimated changes in population presented below show that, although the population of Nevada more than doubled between 1900 and 1907 (see table on p. 39), there was little increase in high-school or university enrollments.² During the succeeding seven years the population underwent a little fluctuation, chiefly in a downward direction, but there was a marked gain in high-school enrollments. The great increase in university attendance began a few years after the increase in the secondary schools. The university has had its most rapid growth within the last four or five years.

TABLE 11.—*Population of Nevada—University and secondary enrollment.*

Year.	Total population (United States Census).	Total population (Prof. Adams's estimate.)	Collegiate enrollment.	Secondary enrollment.
1895.....	43, 010	.....	84	322
1900.....	42, 335	.....	187	568
1906.....	42, 335	65, 238	181	442
1910.....	81, 575	.....	220	896
1914.....	98, 726	85, 968	327	1, 022

It has already been pointed out that Nevada does not rank high among Western States with respect to the per cent of the whole number of pupils and the per cent of the total population enrolled in secondary schools. To determine the relative extent of the service which the university is rendering the State through the medium of its resident courses of instruction, it is necessary therefore not only to examine the relative rates of growth of secondary and collegiate enrollment within the State, but also to compare the higher educational

¹ It should be noted, nevertheless, that under the constitution of the State about 20 per cent of the total wealth is untaxable.

² Students in the preparatory department of the university, for the years when the university maintained such a department, are not included in the figures on which the summary of collegiate enrollment is based, but are included in the figures representing the secondary enrollment. The collegiate enrollment for the year 1914 includes a summer school of 9. All the figures are those reported by the Commissioner of Education.

enrollment in Nevada with those in other States. It appears that, in the proportion of persons availing themselves of opportunities for higher education, Nevada compares very favorably not only with Western States, but with the other States of the Union. The per cent of the whole number of pupils that is enrolled in the university is 2.66. The only Western State having a greater percentage of the whole number in higher education is California, with 2.86 per cent. But three other States in other sections of the country—Massachusetts, Nebraska, and Wisconsin—and the District of Columbia report a larger proportion of the whole number of pupils enrolled in higher education.

Even when the percentage of the total population enrolled in higher institutions is considered, Nevada, in view of the small proportion of persons of school age in the State, makes quite as satisfactory a comparative showing. Five Western States—Colorado, Utah, Washington, Oregon, and California—report a larger per cent of the total population enrolled in higher institutions. In every one of these States, however, the proportion of the population below 25 years of age is greater than in Nevada. Comparing Nevada with the whole United States, it appears that Nevada ranks twenty-fifth among the States with respect to the per cent of the total population enrolled in higher institutions. Moreover, it falls but slightly below the average per cent of the whole country. In Nevada thirty-four one-hundredths of 1 per cent of the total population is enrolled in the university. In the United States thirty-seven one-hundredths of 1 per cent of the total population is enrolled in all higher institutions.

Two conclusions suggest themselves from the foregoing facts: Either the University of Nevada has attained a much greater relative development than the other parts of the system of public education and a disproportionate number of the citizens of the State are availing themselves of higher education; or Nevada is giving higher educational opportunities to an unusually large number of citizens from other States.

The committee has secured statements as to the States and counties of residence of all students enrolled at the University of Nevada during the last academic year. It appears that in the first semester of the year 1915-16, approximately 32 per cent of the total enrollment came from outside the State and that 21.7 per cent were residents of California. In the second semester approximately 29 per cent of the total enrollment was made up of nonresidents. The California contingent was roughly 22 per cent of the total. Perhaps, to be absolutely conclusive, the record should cover a longer period.¹ Incom-

¹ The committee might have secured this information, but it was reluctant to add further to the burdensome tasks which it had imposed upon the recording officers of the university, especially upon the registrar, tasks which were in every case performed promptly and cheerfully.

plete as it is, however, it is highly suggestive, especially when reinforced by the testimony of various institutional officers to the effect that there have always been large numbers of students from California and other Western States at the University of Nevada. If this testimony is accepted without further documentary support, it is clear that Nevada's high rank among the States on the basis of the proportion of persons enrolled in higher institutions is at least partly due to the presence of many nonresident students. The committee is about to discuss in another connection the attitude of State universities toward the acceptance of students from other States. While free migration may as a rule be encouraged, it is believed that an institution in which nearly one-third of the whole student body comes from outside the State may profitably scrutinize with care the motives of these nonresidents.

But from another point of view, the ratio which the number of persons enrolled at the University of Nevada bears to the whole number of individuals in the schools of the State and to the total population is instructive. It manifestly suggests that the University of Nevada is now about as large as might under present educational conditions in the country be expected until the population of the State increases. In a State as prosperous as Nevada, as immersed in profitable material pursuits, the public welfare depends to a greater degree than in many other communities upon the higher education, especially in liberal and cultural lines, of a large proportion of the people. The university ought not to seek numbers as an end, however. The committee is disposed to advise that the university authorities continue their efforts to present the claims of the institution to the people of the State and to induce larger numbers of young men and women from Nevada to frequent it, but that they make no special appeal for students outside the State.

ORGANIZATION AND SCOPE OF THE UNIVERSITY OF NEVADA.

The organization of the University of Nevada now embraces the following main divisions: The college of arts and sciences, offering liberal courses leading to the degrees of A. B. and B. S.; the college of engineering, including the Mackay school of mines, the school of mechanical and electrical engineering, and the school of civil engineering; the college of agriculture, including degree courses and short courses in agriculture and home economics; the Nevada State normal school; the university extension division; a public service division, containing such activities as the State veterinary control service, the State analytical laboratory, etc.; and a summer session designed primarily to furnish opportunities to teachers. Most of these divisions, departments, and schools are treated separately in

later portions of the report.¹ At this point it is sufficient to indicate that the development of departments has thus far corresponded to the demonstrated need for higher liberal and professional training in the State.² The college of arts and sciences is the only organic division of the university which does not minister directly, indeed, to the major vocational interests of the State. With respect to the desirability of the maintenance of a college of arts and sciences as part of a State university, however, there has never been any question. Such a college forms the nucleus of every State university, and it is the germ from which nearly every one has sprung. Its claims have often been presented and need not be urged again here. In spite of the rapid evolution of the vocational curricula, the college of arts and sciences has gained in numbers and strength and prestige all over the country.

The committee is of the opinion that, in view of the smallness of the population, the University of Nevada should not in the near future plan to develop other technical or professional departments. The State does not need them and may spare itself the expense. There are of course always a few individuals who would find a local law or medical school, for instance, convenient, but this does not, in the committee's judgment, constitute an obligation on the part of the State to provide such training. Perhaps a brief statement of some of the considerations involved may help to make the committee's position on the point clear.

It is characteristic of American higher education that almost complete reciprocity prevails between States. State universities erect no barriers against students from neighboring Commonwealths. At most a nominal tuition fee is charged, which is intended to cover a part of the actual expense devolving upon the State for the instruction of each student. Many State universities charge no tuition fee at all, receiving the citizens of other States on equal terms with natives. It is expected that there will be a considerable movement of students from one State to another. For the majority of States the number of nonresidents who are educated at State expense is probably just about balanced by the number of their own citizens who receive similar favors at the hands of other Commonwealths. But even the few State universities which, like Michigan and Illinois, have drawn unusually large numbers of students from outside the State borders have hesitated to put financial obstacles in their way, in the belief that these nonresident students both bring something valuable to the life of the institution and also take away with them

¹ For discussion of the college of arts and science, college of engineering, the Mackay school of mines, the college of agriculture, and the Nevada State normal school, see Chapter X. For discussion of the public service division, see Chapter IV.

² For the vocational distribution of graduates of the last 10 years, see Appendix, p. 145.

a comprehension of and interest in the State of their temporary adoption that are ample compensation for the investment made in their behalf. These considerations apply equally to Nevada, of course. But the State has to determine whether so large a proportion of nonresidents as was mentioned above may not threaten the integrity of the institution as a State university and tend to divert it from its legitimate purposes.

It is now commonly recognized that no university, not even the richest, can develop all modern lines of higher training. Each institution must to a certain extent specialize. Its scope must be determined primarily by the needs of its constituents. It is far more important that a university should provide facilities for the highest type of instruction and research in those branches most needed by its patrons than that it should attempt the impossible task of covering all departments of knowledge. Many universities have already begun to act upon this principle. There is constantly less readiness to expand into expensive new departments. The recent interest of State appropriating bodies in the details of university policy and their insistence upon the utmost frugality consonant with sound educational results in the operation of university establishments will doubtless accentuate this tendency. The few individuals who desire training in lines not cultivated by the home university now seek these opportunities elsewhere, and it is apparently to the public interest that they continue to do so. Even if the home university were to pay their expenses at other institutions outside the State limits, which, as far as the committee is aware, no State has yet done, the charge would be considerably less than the cost of maintaining professional departments for a small number of students. Certain large initial expenses must be incurred in the establishment of any branch of professional training, whatever the number of students who are to avail themselves of it.

The committee believes that the time is rapidly approaching when each great university will take special pride in the excellence, perhaps the preeminence, of its offerings in one or two lines of work. State universities in the more thickly settled Commonwealths will probably have to provide training in all the staple professional branches. But this obligation is not and will not be laid on a State of the size of Nevada. A community of less than one hundred thousand people, even if an enormously wealthy community, can not maintain a university worthy of the name without taxing itself at a high rate. The fact that Nevada stood forty-first among the States in 1913-14 on the basis of the amount expended for higher education for each \$1,000 of wealth does not refute this statement, because the university has not yet been adequately supported. Specific statements of some of its larger needs appear later in this report. Suffice it here

to allude to its shortage of buildings and appliances in several of its most important departments and to the need for a considerable expansion of its instructional and experimental work in those lines which bear directly on the State's principal industries. If the university's appropriations were doubled, the money could doubtless all be profitably devoted to the sound development of the colleges, schools, and departments already established. The institution has, in fact, unique opportunities for achieving national eminence in at least two lines, in mining engineering and in agriculture as applied to arid lands and mountain ranges. This distinction would be worth attaining. Nevertheless, it is after all quite secondary in importance to the State's need for the more complete exploitation of those natural resources with which these applications of science deal.

Putting its views on these vital matters in a word, the committee would urge that the university make no immediate plans for the addition of further departments, and that it make no special effort to increase its enrollment for the mere sake of larger numbers. Its position in the educational world will be stronger and its services to the State more valuable, if it remains a small institution doing superlatively well what it undertakes to do.

SUMMARY OF RECOMMENDATIONS.

1. The rejection of proposals to separate the college of agriculture (and possibly other departments) from the university and to maintain it at another place.
2. The inadvisability of attempting to increase largely the university enrollment.
3. The restriction of the scope of the university for the present to the liberal and technical divisions already established.

Chapter IV.

THE UNIVERSITY OF NEVADA AND THE PUBLIC SERVICE.

It is commonly recognized that the State university has a threefold function with relation to the State: It must give liberal and vocational instruction through the medium of organized courses of study for students in residence; it must carry to communities and individuals who can not come to it for formal teaching information and instruction through the medium of its extension service; it must assist in the solution of the problems relating to the life and activities of the State and add to the sum of human knowledge through research. The modern State university is not therefore merely a local institution for the instruction of resident students, as perhaps many citizens are still inclined to believe. The manner in which the State university should perform this triple task of teaching, extension, and research depends again on the characteristics and needs of the State. In some States one of these functions may properly be stressed more than would be necessary in others, but there is now general agreement among students of university administration that the State universities should everywhere to some extent cultivate all three.

The traditional activities of the University of Nevada received brief mention in the preceding chapter. The university's performance of these other two functions deserves separate treatment, both by reason of the unusual organization of them and because of their importance to the people of Nevada.

THE PUBLIC SERVICE DIVISION.

The legislature of 1915 consolidated into a "Public service division" all the various extramural services which had from time to time been more or less directly connected with the university, together with certain other scientific activities. The public service division under an act approved March 11, 1915, consists of the following departments: The State analytical laboratory; the State hygienic laboratory; food and drug control; weights and measures; agricultural experiment station; agricultural extension; State veterinary control service; engineering experimentation.

The last three of these were established by the legislature of 1915. The act contains these sections providing for the control of the departments:

SEC. 3. The board of regents of the University of Nevada, upon recommendation of the president, shall designate and appoint a qualified individual to conduct each of these various departments of the public service division and shall grant him such assistants as they deem necessary, and the powers and duties of these individuals appointed as herein provided shall be as stated in the statutes establishing each of these several departments of the public service division: *Provided, however,* That in those instances wherein the statutes concerned impose upon the individual appointed as herein provided any police power, the appointment shall receive the approval of the governor of the State.

SEC. 4. All rules and regulations necessary for the proper administration and enforcement of the statutes establishing the departments comprehended in this public service division of the University of Nevada shall be made by the president and board of regents of the University of Nevada.

It will be observed that the public service division embraces all the organized agencies for extension and (since there is no graduate school) for research. In addition, it includes on the same administrative basis several other activities designed to conserve the lives and property of the people of the State, activities which when maintained in other States generally have no connection with the university.

EXTENSION.

Extension work at the University of Nevada is new. Thus far it consists of agricultural extension alone. The division of agricultural extension (now consolidated in the public service division) was organized July 1, 1914, under the provisions of the Smith-Lever Act. For the year 1915-16, in addition to the \$10,000 appropriated under this act to every State in the Union, the State of Nevada received from the Federal Government as its proportion of the additional appropriation granted to each State accepting the provisions of the act \$834, which sum was duplicated by appropriations of the State legislature. When the Smith-Lever Act matures in 1921 the State of Nevada will receive annually \$15,699 from the Federal Government. While the amount received by the State of Nevada under this act is small, it nevertheless constitutes a very substantial foundation for extension work in agriculture and home economics. The work is thus far in its initial stages. It is being organized in close cooperation with the Department of Agriculture and has already led to gratifying practical results. The committee is glad to commend the plans in accordance with which it is being carried on.

The president of the university and the director of extension are right in urging increased support for the work of the extension division. A State with such immense distances and in which so large a percentage of the people are engaged in agriculture probably can not

be adequately served even by the full amount of the Federal appropriation under the Smith-Lever Act together with the State's necessary minimum addition to this sum. And yet, to the committee, another aspect of the extension problem seems equally worth emphasizing. Although perhaps the most insistent need for university extension in a rural State is met through the provision of agricultural extension, the legislature may be reminded that agricultural extension is but a small part of the whole extension field and that there are other as yet inarticulate needs which are no less real. For instance, an extension service arranged for persons engaged in mining would minister to a group as large as the agricultural population and as deserving of educational assistance. Many States are organizing through their normal schools extension courses for teachers which are coming to be regarded as among the most important agencies for developing professional spirit and imparting practical information. Nevada's normal school is a part of the university. If the State, whose teachers stand greatly in need of such service, is to reach its teachers through extension courses, these courses must naturally be furnished by the university.

It appears to the committee also that in a State where communities are so remote from one another, where there are few cities, and where transportation facilities do not yet touch all districts, there is a special need for the kind of university extension which does not relate directly to vocational interests. It is precisely the citizens of such a Commonwealth who would profit most by correspondence courses, lectures, and exhibitions dealing with art, literature, music, and the interesting elements of science. The possible developments of university extension are almost boundless, limited only indeed by the resources of the institution which purveys it. The committee has no intention of cataloguing even the most common extension activities. It merely desires to lay stress on the fact that the State has almost everything yet to do in this field and to point out some of the more obvious directions in which the extension service may develop.

ORGANIZED RESEARCH.

Research as carried on at the smaller State universities and colleges of agriculture is for the most part intensely practical. It has tended to relate itself directly to the present industrial problems of the State. Often its results have been of immediate industrial benefit. The committee does not, of course, hold the opinion that what might be called "dollar research" is the only kind that should be encouraged by a State institution. Many research undertakings which appear to have slight bearing on present economic needs have proved productive of remoter benefits of great importance. There is also a large class of investigations totally unrelated to material ad-

vantages the results of which have in intangible ways enriched human life and contributed to the progress of civilization. All these are the province of the university. Their prosecution must largely depend on university scholars. But research is as a rule a costly enterprise; especially in the sciences expensive equipment is often needed; and always there is involved the release of certain highly trained individuals from other duties. What is sometimes called "pure research," therefore, is generally a luxury in which the smaller universities that are still in the early stages of development can indulge but sparingly, if at all. It is proper that such institutions should center their efforts on problems of immediate practical concern, at the same time striving to keep alive in all departments the spirit of scientific inquiry against the day of larger resources.

The organized research of the University of Nevada is administered in the public service division chiefly through the agricultural experiment station and the department of engineering experimentation. The State hygienic laboratory and the State veterinary control service have also included a certain amount of research, among other activities. Of these agencies the first two aim directly at the solution of difficulties concerning the agriculture of the State.

THE AGRICULTURAL EXPERIMENT STATION.

The general purpose of the agricultural experiment stations established and supported in every State by acts of Congress of 1887 and 1906 is too well known to need explanation here. It is sufficient to note that the Nevada station has in the last three years confined itself exclusively to the investigation of three sets of pressing local problems—the water problem, the animal disease problem, and the group of problems bearing on range management and range improvement. In the study of animal diseases it has had valuable assistance from the director of the State veterinary control service, and has thus correlated its work with the work of that department. This practical policy of the station has received strong support from the present administration of the university and is indorsed by the Office of Experiment Stations of the United States Department of Agriculture. The committee believes that it must commend itself to all intelligent observers of the State's needs.

ENGINEERING EXPERIMENTATION.

The department of engineering experimentation was created by the legislature of 1915. In cooperation with the State engineer's office and the United States Bureau of Irrigation Investigations, projects have been undertaken to determine the extent of underground waters in various parts of the State and the feasibility of using these waters through pumping for agricultural operations. It

is apparent that such investigations are closely related to the work of the experiment station and comport with the purpose of a State university which includes colleges of agriculture and mechanic arts. The results already appear to justify the enterprise.

THE STATE HYGIENIC LABORATORY.

The principal function of the State hygienic laboratory is to aid local and State health authorities in combating communicable diseases. It provides "facilities for the diagnosis of infectious human diseases and for research into the nature, cause, and methods for the control of such diseases." The major part of its work has been and probably will be diagnostic. As such it is of great public benefit. An instance of the service which such a laboratory is in a position to perform for the State appears in connection with the recent epidemic of rabies among the live stock of a certain section of the State. In 11 months the laboratory administered the Pasteur treatment to 62 persons who had been exposed to the infection of the disease. The research work of the department is secondary and incidental.

THE STATE VETERINARY CONTROL SERVICE.

The object of the State veterinary control service, which was created by the legislature of 1915, is to perform the same service with respect to domestic animals that is rendered by the State hygienic laboratory to human beings. It includes the manufacture and distribution of various sera and vaccines. The director is State quarantine officer and head of the department of veterinary science and bacteriology of the agricultural experiment station. In the latter capacity he has made valuable contributions through research to the knowledge of the causes and nature of certain animal diseases. Both the economic and scientific importance of the State veterinary control service are unquestioned. Its connection with the university is appropriate.

ANALYTICAL WORK AND INSPECTION.

The remaining departments of the public service division may be conveniently grouped under this classification. It will be evident also from the brief statements already made that the work of the State hygienic laboratory and the State veterinary control service consists in part of activities represented by the foregoing heading.

FOOD AND DRUG CONTROL.

The work of this department embraces the analyses of samples taken in the field by representatives of the department, the analyses of food and drug products submitted to the laboratory by residents of the State, careful inspection of food and drug products offered for sale on local markets, and the sanitary inspection of places where food or drug products are manufactured, stored, and sold.¹

¹ Quotation from the report to the honorary board of visitors, 1916.

The State law providing for food and drug inspection and analyses follows the national food and drugs act and specifies the adoption in Nevada of the Federal rules and regulations relating to the enforcement of it.

WEIGHTS AND MEASURES.

The standard weights and measures adopted by the National Government have also been adopted by the Nevada State Legislature, and the laboratory of weights and measures is charged with the duty of inspecting weighing and measuring devices used in the sale of commodities throughout the State to determine whether they meet these legal requirements. The food and drug control and the inspection of weights and measures are carried on from the same laboratory through the efforts of the same staff. The value of both services to the citizens of the State is patent.

In addition, the laboratory has undertaken to analyze the samples of water and soils submitted by residents of various parts of the State. Later in this report the need for the establishment of an adequately equipped soils laboratory, the lack of which has been in part supplied by this already overburdened department, will be mentioned.

STATE ANALYTICAL LABORATORY.

The State analytical laboratory, or State mining laboratory, was established 21 years ago in order that citizens might have ores and minerals taken within the boundaries of the State analyzed and assayed without cost. The composition of the samples submitted, together with a general statement of their uses and values, are reported to the senders. Record of the materials and of the localities in which they are found is kept by the university. In order not to place the university in competition with professional assayers and engineers, the reports made on samples do not include close determinations of the gold and silver values of the minerals. The service rendered by this laboratory has been of great benefit to prospectors and the demands made upon it have increased rapidly.

The committee has been in general much impressed with the effectiveness and value to the State of the work of the public-service division. It will be evident to all that as the demands on the division increase (and they have grown rapidly already), further equipment and more experts must be provided. Certain of its departments, as has been indicated, are charged with regulatory powers. The exercise of these powers is an occasional cause of friction tending to make the university temporarily unpopular with the persons over whom the authority is exerted. The question whether the university is the appropriate agency permanently to exercise such powers deserves the careful consideration of the legislature and of the university officers.

CHAPTER V.

STANDARDS AND THE DISTRIBUTION OF THE STUDENT BODY AT THE UNIVERSITY OF NEVADA.

Allusion has been made to the belief that the standards of the University of Nevada are not as high as they should be. The opinion that such is the case was expressed to the committee by members of the faculty, by students, and by certain citizens. Documentary evidence of the existence of this opinion may also be found in the issue of *The Sagebrush*, October 17, 1916. On the occasion of its meeting with the board of regents, the committee asked of the board the question: "Does the board of regents desire that the standards of the University of Nevada shall be equal to those of other first-class State universities?" (See Appendix, p. 137.) The board answered the question emphatically in the affirmative. In view of these considerations the committee judges it to be important that the actual practice of the university in the matter of standards should be made clear.

The integrity of academic standards is difficult to determine. They can not be tested with mathematical precision either by those on the inside or by outside investigators. The quality of a student's work can not be subjected to the same exact measurement or analysis that may be applied to a piece of machinery or a chemical compound. The human factors, teachers and students alike, are highly variable. Knowledge itself is but partially and imperfectly standardized. Institutional standards therefore can never be demonstrated beyond dispute, not even by comparison with other institutions, although such comparison is often illuminating.

The standards of a university depend chiefly on the mental attitude, on the conscience of its officers. Standards are likely to be high if these officers regard intellectual achievement as the prime business of a university; if they prize it above large enrollments and athletic prominence; if their rules are shaped to its attainment; if they enforce their rules firmly and honestly, even against lovable but ill-equipped individuals. Of course, no institution, least of all a State university, can ignore the facilities for scholarly preparation possessed by the schools which support it. It can not set up arbitrary requirements which are beyond the reach of those whom it must serve; but it may demand of its students the utmost intellectual

attainment for which their previous preparation fits them, and by steady upward pressure it may gradually raise the level of scholarship within its sphere of influence. It is in this way that the present standards of both universities and secondary schools have been established in the United States.¹ High standards then are the product of unremitting diligence on the part of university officials and of constant aspiration.

It is manifest that the estimation of university standards is largely a matter of judgment, and as such liable to error. However, there is generally a considerable body of evidence on which a judgment may be based. In the case of the University of Nevada the committee has collected a great deal of evidence. The most important items it proposes to summarize or to reproduce in full herewith, after which it will state its conclusions.

The first and most obvious piece of evidence relating to an institution's standards is its own statement of its requirements. Colleges and universities are under the necessity of giving wide currency to the announcements of their requirements for entrance and for graduation. These announcements commonly appear with full detail in their catalogues. The latest issue of the catalogue of the University of Nevada (Apr. 1, 1916) contains a clear statement of its requirements under the title "Admission and degrees" (pp. 70 to 90, inclusive).

According to this statement the university requires 15 units of secondary work for unconditional admission. Students who are candidates for degrees may be admitted with conditions in as many as two units. When admitted with conditions students are called "limited freshmen." These requirements on the quantitative side are in accord with the accepted practice of State universities and other reputable collegiate institutions in all sections of the country where admission by secondary school certificate prevails. There is at present a tendency, which the committee heartily indorses, to reduce to one unit or even to abolish entirely the amount of deficiency which may be allowed to a student at entrance. However, this tendency is by no means universal, and an institution which grants conditional admission on presentation of 13 clear secondary units is in good company.

With regard to the subject content of the 15 required units, the University of Nevada occupies a very progressive position. There are various types of standard admission requirements, discussion of

¹ In comparison with the accepted standards of to-day, the standards of the best American universities 50 years ago were low indeed. School conditions in certain States do not yet permit the enforcement of the most severe collegiate standards, but the obligation resting on the colleges of these States to contribute in the manner indicated above to the general elevation of standards is no less clear. Meanwhile, it is equally their duty to declare without equivocation or pretense just what is required for college entrance and graduation.

which would occupy disproportionate space in a document of this character.¹ Suffice it to say that one of the best-considered modern systems of entrance requirements is that adopted recently by the University of Chicago. The main principles of the plan are also recommended in substance by the committee on articulation of high school and college of the National Education Association in 1911.² While not conforming to this system in every detail (and indeed details must necessarily differ in different localities), the requirements for admission to the college of arts and sciences of the University of Nevada in general follow the Chicago plan (see the issue of the catalogue referred to, pp. 71 ff.) Admission to the technical colleges is on a somewhat less elastic basis, but this also is in accord with the best practice.

The University of Nevada, like most institutions of collegiate rank, grants facilities for study, however, to other than regular students. It accepts special students. The conditions on which special students are admitted and allowed to prosecute their work are stated on page 81 of the issue of the catalogue cited, as follows:

SPECIAL STUDENTS.

Persons not candidates for a degree, who may wish to pursue some one study and its related branches, may be admitted as special students without passing the usual entrance examinations.³ Admission will be granted only upon the recommendation of the instructor under whom the special work is to be done, after such a recommendation has been passed by the council of administration. Special students must be at least 20 years of age and must register for not fewer than 10 hours of work per week. Exception to the rule in regard to the age limit and the number of hours of work can only be made by action of the university senate. No one may register in the university as a special student for more than two years, except upon the recommendation of the faculty of the college in which he is working and with the approval of the council of administration. The entrance committee will require from all special students a statement from reliable persons as to character and a record of previous academic work.

The requirements for securing the bachelor's degree imposed by the leading universities and colleges of the country vary greatly in details. In one point alone is there substantial uniformity, namely, in the number of academic counts (usually expressed in semester hours) demanded for the bachelor's degree. An overwhelming majority of colleges and universities require 120 semester hours. Occasionally the minimum number runs slightly higher, and there are variations above this minimum in the different schools and depart-

¹ The interested reader is referred for further details to Bul., 1913, No. 7, College Entrance Requirements, by Clarence D. Kingsley; to the Rep. of the Commis. of Ed., 1914, vol. 1, p. 160 and pp. 163 ff.; Rep. of the Commis. of Ed., 1915, vol. 1, pp. 148 ff.; and to the reports of the committee on college entrance requirements and of the committee on the articulation of high school and college, included in Proc. Nat. Ed. Assoc. for the years 1911, 1912, and 1913.

² See Proc. Nat. Ed. Assoc., 1911, pp. 559 ff.

³ Like most State universities, the University of Nevada admits both by examination and by certificate from recognized secondary schools. The majority of students, however, are admitted by certificate.

ments. With respect to the quantitative requirements, however, the bachelor's degree may be said to be standardized.¹

Most colleges and universities now organize the student's work in arts and sciences in accordance with some form of the group system, that is, the student is expected to choose one or two branches in which he will specialize. The remainder of his academic work is then made up (1) of subjects intended to contribute to a thorough comprehension of his special fields, (2) of subjects important for purposes of general information, and (3) of a certain limited amount of free options. Under different names and with large variations in practical application, the group system is in force in a very considerable number of the best colleges and universities of the country.

The University of Nevada requires for graduation in the college of arts and sciences 124 semester hours. In the colleges of agriculture and engineering the number of required hours is considerably higher. In the college of arts and sciences the courses leading to the baccalaureate degree correspond substantially to the general definition of the group system just given.²

Academic standards relate also to the conditions upon which students are allowed to remain in the university. With regard to these conditions the catalogue of the University of Nevada states (pp. 83 and 84):

Any student who receives a final grade of less than 60 per cent in any subject shall be considered as "failed" in that subject.

Any student who receives a grade of less than 70 and 60 per cent or more shall be passed conditionally. * * *

If at the close of any semester a student does not pass in at least one-third of his work, he will be suspended from the university for a period of one semester. If at mid-semester or at the end of a semester a student does not pass in at least one-half of his work, he shall be placed on probation and notified of such probation by the registrar; if, then, at the end of the next regular report of grades by the faculty the student has shown no improvement, he will be suspended from the university for the following semester.

The foregoing paragraphs summarize the principal regulations and announcements bearing on the matter of standards. It appears that with reference to the announced requirements for admission to regular standing and the requirements for the baccalaureate degrees the university's position is orthodox. On subsequent pages the committee comments on the requirements for special students and for continuance on the rolls of the university.

¹ The committee is not unaware of a tendency on the part of a number of institutions of repute to emphasize other than quantitative measures for the determination of fitness to receive the baccalaureate degree. Several of the strongest institutions in the country have never reckoned the work of candidates for degrees in terms of hours.

² Degree requirements in technical courses, such as those in agriculture and engineering, are generally much more closely prescribed than degree requirements in the arts and sciences. This is the case at the University of Nevada.

The highest printed requirements may be nullified by lax enforcement. The real test, therefore, of a university's standards is not what it says it requires, but what students must actually do to get in and stay in. The committee has paid particular heed to the enforcement of entrance requirements. It has reviewed with minute care the records of all students entering in 1915 and has subjected to a somewhat less detailed scrutiny the records of those accepted in the years immediately preceding. It concentrated its attention especially on the latest records, for two reasons: First, it is important for a judgment of the current condition of the university that the citizens of the State should know what it is doing now rather than what it did several years ago; and, second, it is precisely the present practice of the university that has been called into question. It was repeatedly suggested to the committee that the standards of the institution are less rigid now than they were several years ago. The summary in the following paragraph relating to regular students in arts and sciences may be taken as typical of the university's enforcements of the requirements for admission to regular standing.

Seventy-three persons entered as regular freshmen in arts and sciences in 1915. Seventeen of these, or 23.2 per cent, were deficient in some part of the entrance requirements. The number of units in which conditions were imposed varied from one-half to two. In no single case was a student admitted as a freshman with conditions amounting to more than two units. The committee noted but two cases in which the full two units of conditions allowed were taken. The majority of those who were deficient presented at least 14 units of work, corresponding to the university's prescription. Several offered more than the required 15 units, but had failed to cover all of the work in English or mathematics or foreign languages prescribed by the university as part of the entrance requirements. Entrance conditions are plainly recorded. Examination of the records of preceding classes showed that as a rule they are promptly made up.

The evidence shows that the university's requirements for admission to regular standing are conscientiously enforced. With respect to its treatment of this group of students the institution deserves a clean bill of health. A university located in a section where secondary school facilities are no more perfectly developed than here could hardly in justice to its constituency set up more drastic requirements. It could not fairly, for instance, refuse to allow any conditions at all to entering students.

SPECIAL STUDENTS.

Attention was called above to the group of special students upon whom a different requirement is imposed. Examination of the summary of enrollment appearing on page 221 of the edition of the cata-

logue of April, 1916, shows that out of a total enrollment of 441 (short courses and extension courses not counted), 125, or 28.39 per cent, were special students. The university's definition of the term "special student" has, however, been loose. The category includes all persons not candidates for degrees, whether they have absolved the entrance requirements or not.¹ Deducting from the total just given all those qualified for regular standing, it appears that there were 101 genuine specials in 1915-16, who constituted 24.5 per cent of the student body.

In the majority of institutions that the Bureau of Education has thus far surveyed the percentage of special students has been so small as to be almost negligible. The number of these students constituted no problem whatever in the administration of the institutions concerned. Indeed, in but one other institution, the University of Arizona, has the Bureau of Education found a comparable percentage of special students. The conditions of population, industrial development, and secondary school facilities are similar in Nevada and Arizona. The presence of substantially equal proportions of special students in the total enrollments of these two State universities gives ground for the assumption that a liberal policy of admission is required in the present stage of the educational evolution of these States. Nevertheless, it will readily be apparent that so large a number of special students creates certain serious difficulties in the administration of these institutions. A group of students amounting to nearly one-third of the entire enrollment can not be ignored when the policies of the university are formulated.

In considering the problem as presented at the University of Nevada several questions regarding these students instantly arise. Does the state of secondary education in Nevada necessitate the admission of so many specials to a university that is endeavoring to set up high standards for degree work? Where do the special students come from—from Nevada, from communities without secondary school facilities, or from other States? What departments do they chiefly seek? Does the work done by them in the courses they elect compare favorably in quality with that done by the regular students? The committee submits the following evidence bearing on these matters.

Reference to page 47 shows that 17 high schools in Nevada are accredited by the State university. There are 35 high schools altogether in Nevada, and 16 of these offer less than a four-year course.² The whole vast territory of the State is naturally not adequately

¹ The committee suggests the desirability of making a more accurate classification of the students in the university.

² Most of the 16 schools mentioned offer but one or two years of instruction beyond the grades and are not properly high schools at all.

served by this number of schools. Nevertheless, the secondary school facilities in existence are fairly well standardized and articulated with the university. If it should appear that a large number of special students come from places where there are no high schools, the natural conclusion would be that the university is making quite justifiable concessions to a group of persons that has been handicapped with respect to educational opportunities.

Of the 125 specials (accepting the university's classification), 89 are residents of Nevada, 19 are residents of California, and 17 come from other States and countries. Of the 89 Nevada specials, 69 reside in Reno, 10 come from Ely, Gardnerville, Sparks, or Tonopah (towns with good four-year high schools), one comes from a community having a two-year high school, and 9 come from places maintaining no high schools. It may be noted in passing that 10 regular students report residence in communities which have no high schools.

It would appear that the large group of special students does not consist primarily of citizens who have been deprived of opportunities for secondary education by accident of residence. The committee was informed, however, that the reported residence of these persons is in many cases misleading. Parents having children to educate are likely to move to one of the larger centers, especially to Reno, during the term of their children's attendance at secondary or higher institutions. Self-supporting young people from the educationally less-favored districts frequently transfer their residence to Reno in order to avail themselves of the advantages which the university offers under its rules for special students. These two classes of students are of course primarily the ones for whom the university should make concessions, if concessions are to be made at all. The university authorities have not, as far as the committee was informed, analyzed carefully the group of specials to determine how many of them properly belong in the two categories just indicated. Such inquiry as has been made leads to the conclusion that a considerable number of specials registered from Reno and other larger towns have been handicapped in their preliminary education through no fault of their own. The committee suggests the desirability of a thorough study of the educational history of the whole group of special students.

Evidently there are two general classes of special students at the University of Nevada, the one desirable, the other generally undesirable in a small State university which is short of equipment. These are: (1) Residents of the State, and particularly residents of the city in which the university is located, persons whose preparation or whose vocations prevent them from devoting full time to university work, but who can carry on with profit two or three courses; and (2) residents of other States. A large proportion of the total number of

specials, 28.8 per cent, come from outside the State. The University of Nevada is situated so close to the California border that the neighboring portion of that State may be regarded as its legitimate territory. But very few California specials come from this territory. The majority reside in remote parts of California. There are also numerous specials from other more distant States. The committee is of the opinion that university officers may and ought to discourage the presence of these students at the university.

The distribution of special students among the different departments is also of interest. The college of arts and sciences enrolls 54, or 23.2 per cent of its total enrollment (graduate students being excluded); the college of engineering enrolls 43, or 35.29 per cent of its total enrollment; and the college of agriculture, which includes the school of home economics, enrolls 29, or 38.6 per cent of its total enrollment.¹

Of the 69 special students from Reno, 38 were registered in arts and sciences, 16 in some branch of engineering, 8 in home economics, and 7 in agriculture. Eighteen of the 69 were married women.

The relative scholastic standing of the special students and of certain other groups is indicated by the following averages for the year 1915-16:

	First semester.	Second semester.
Average of all students.....	78.4	78.2
Average of all special students.....	76.6	73.8
Average of all special students from California.....	74.8	72.6
Average of freshmen from California.....	77.7	78.4

In regulations applying to special students quoted above, it was stated that these students are not candidates for degrees, that they must be at least 20 years of age, and must register for at least 10 hours. The committee was unable in the time at its disposal to discover how large a proportion of those who enter as specials become after one or two years of residence candidates for degrees. It was informed by several officers of the university that a considerable number of specials are advanced to regular standing. There are, of course, many cases where such action is in accord with the most exemplary attitude toward university standards. No one would counsel the exclusion from the advantages of degree courses of all irregularly prepared students who as specials have demonstrated their capacity for college work and who subsequently, through examinations or otherwise, have absolved the regular requirements. But a university must allow transfers from special to regular standing with extreme caution; otherwise the special student category proves

¹ There are certain slight discrepancies between the percentages given here and those presented in the table on p. 78 and the figure on p. 76. The table and figure were prepared by the deans of the college of arts and science and the college of engineering on the basis of the final figures for the whole academic year. The percentages recorded above are derived from the summary of enrollment printed in the catalogue, April 1, 1916.

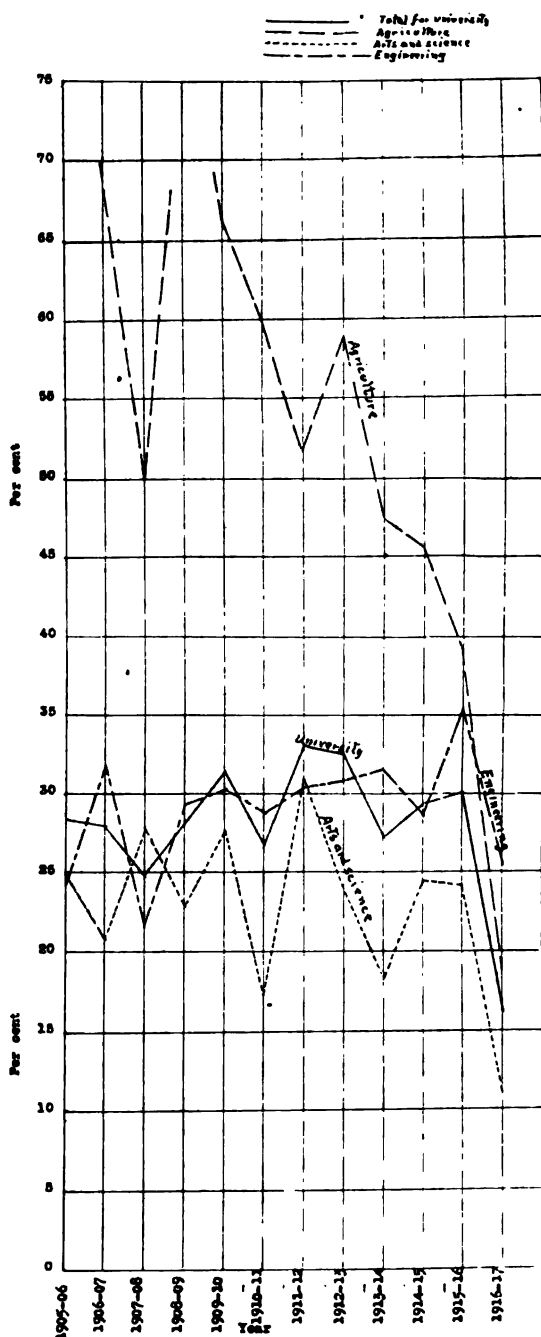


FIG. 10.—Per cent of special students enrolled, 1905 to 1916.

an easy back-door route to academic rank and degrees for students who have not met the preliminary requirements for these honors. Academic degrees soon cease to be honors for anyone if commonly attained in this way. The committee does not mean to imply that the University of Nevada has debased the value of its degrees by too much lenience in admitting special students to candidacy for them. It has secured, as has been stated, no definite evidence on this point. It merely calls the attention of the university authorities to the danger involved in a policy of easy transfer from one status to the other.

The committee finds the allegation that the university has of late lowered its standards, particularly through the admission of constantly larger numbers of special students, wholly unfounded. As further evidence it submits a table summarizing the university registration from 1905 to 1917, and a group of curves showing the percentages of special students during the same period in the three principal divisions of the university. It will be seen that the largest proportion of special students were registered in 1911-12; that 1915-16 was a year in which the registration of specials exceeded the mean; and that there has been a particularly sharp falling off in the percentage of specials in the first semester of the current academic year.

The committee has felt that the reduction in the number of special students attending the university is a consummation devoutly to be wished. The committee was at first disposed to suggest that the minimum age at which special students may be admitted to the university be raised to 21. This standard has been adopted by many of the strongest universities of the country. It insures maturity and establishes a presumption of earnestness. Records show, however, that very few special students would be excluded from the University of Nevada by the imposition of such a requirement. Approximately three-fourths of the special students now registered are 21 or over. Moreover, many of those under this age have long been self-supporting, often, indeed, have occupied positions of authority and responsibility. They are mature beyond their years, and earnest. The university is the only institution in the State which they would consent to attend. It is, in fact, the only one equipped to meet their particular vocational needs. The establishment of an arbitrary age requirement would secure a slight reduction in numbers at a sacrifice of some of the most desirable students in the university.

The committee concludes that constant administrative pressure rather than fixed rules should be applied to the problem of special students. For example, the admission of specials by the committee on admissions instead of on the recommendations of individual instructors would undoubtedly tend to keep out the clearly undesirable specials. The reduction of candidates from other States who could

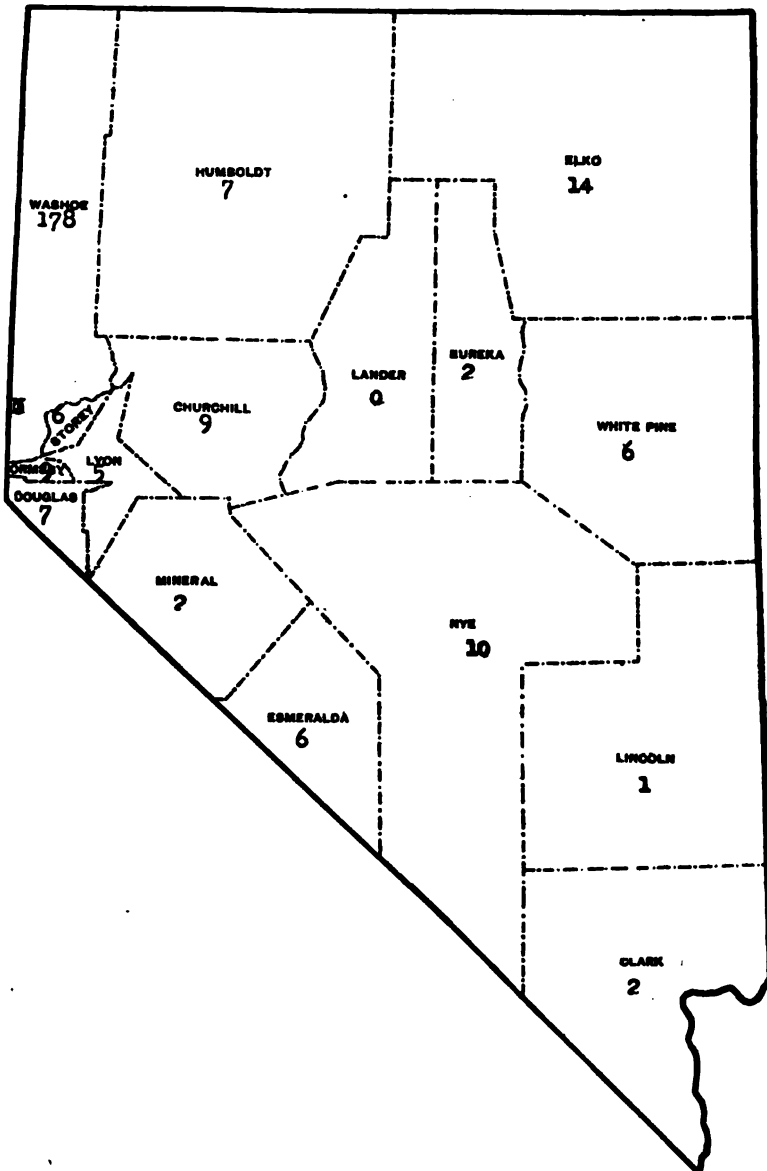
TABLE 12.— *University of Nevada registration, 1905-1917.*

(All graduate students, summer school students, short course students, and visitors omitted.)

Academic year.	College of arts and sciences, and normal school.			Mechanical engineering (including electrical engineering beginning 1912-13).			Civil engineering.			Murray School of Mines.			College of engineering.			School of agriculture.			School of home economics.			College of agriculture.			Registration in all schools of university.			
	Total regis.	Specials.	Per cent of	Total regis.	Specials.	Per cent of	Total regis.	Specials.	Per cent of	Total regis.	Specials.	Per cent of	Total regis.	Specials.	Per cent of	Total regis.	Specials.	Per cent of	Total regis.	Specials.	Per cent of	Total regis.	Specials.	Per cent of	Total regis.	Specials.	Per cent of	
1905-6.....	12	12	100.0	30	9	30.0	8	2	25.0	55	15	27.3	104	22	21.2	1	0	00.0	10	4	100.0	11	10	90.9	187	53	28.3	
1906-7.....	12	91	20.9	26	10	38.4	6	0	00.0	72	23	31.9	98	21	21.4	1	0	00.0	4	1	100.0	5	4	80.0	200	56	28.0	
1907-8.....	12	90	25	27.8	28	6	21.4	10	2	20.0	60	13	21.7	96	21	21.9	1	0	00.0	6	1	100.0	2	4	50.0	190	47	24.7
1908-9.....	12	109	25	22.9	26	8	30.8	10	5	50.0	44	14	30.4	82	24	29.3	1	0	00.0	8	6	100.0	7	6	85.7	198	55	27.8
1909-10.....	14	112	31	27.8	28	4	14.3	16	4	25.0	45	15	34.1	89	27	30.3	7	2	28.6	8	12	100.0	15	10	66.7	216	68	31.5
1910-11.....	15	101	17	16.8	28	4	14.3	7	2	28.6	45	17	37.8	80	23	28.8	13	3	23.1	12	12	100.0	25	15	60.0	205	55	26.7
1911-12.....	15	158	49	31.0	37	6	16.2	13	6	46.1	42	13	30.6	82	25	30.5	8	8	100.0	24	24	100.0	59	35	59.3	271	90	33.2
1912-13.....	15	160	38	23.8	55	16	29.1	10	2	20.0	28	10	34.6	94	29	30.9	11	31.4	15	14	100.0	31	16	51.6	313	102	32.6	
1913-14.....	15	154	29	18.3	60	21	35.0	9	3	33.3	35	9	25.7	96	31	31.6	29	27	44.1	15	13	86.3	44	21	47.7	298	81	27.4
1914-15.....	15	187	44	24.6	74	25	33.8	16	3	18.8	40	15	37.5	125	36	28.8	45	15	33.3	17	10	58.8	61	28	45.9	373	110	29.5
1915-16.....	15	222	54	24.3	84	24	27.5	13	3	23.1	35	17	48.6	117	42	35.9	58	19	32.8	9	3	33.3	75	29	38.7	414	125	30.2
1916-17 ¹	15	225	24	10.7	67	19	28.4	11	3	27.3	35	7	20.0	113	29	25.7	39	7	17.9	2	2	100.0	43	9	20.9	396	62	15.1
1916-17 ²	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

¹ Twelve in normal school.² First semester.³ Second semester to Feb. 12.

not present a very convincing reason for choosing the University of Nevada in preference to home institutions might also quite easily be

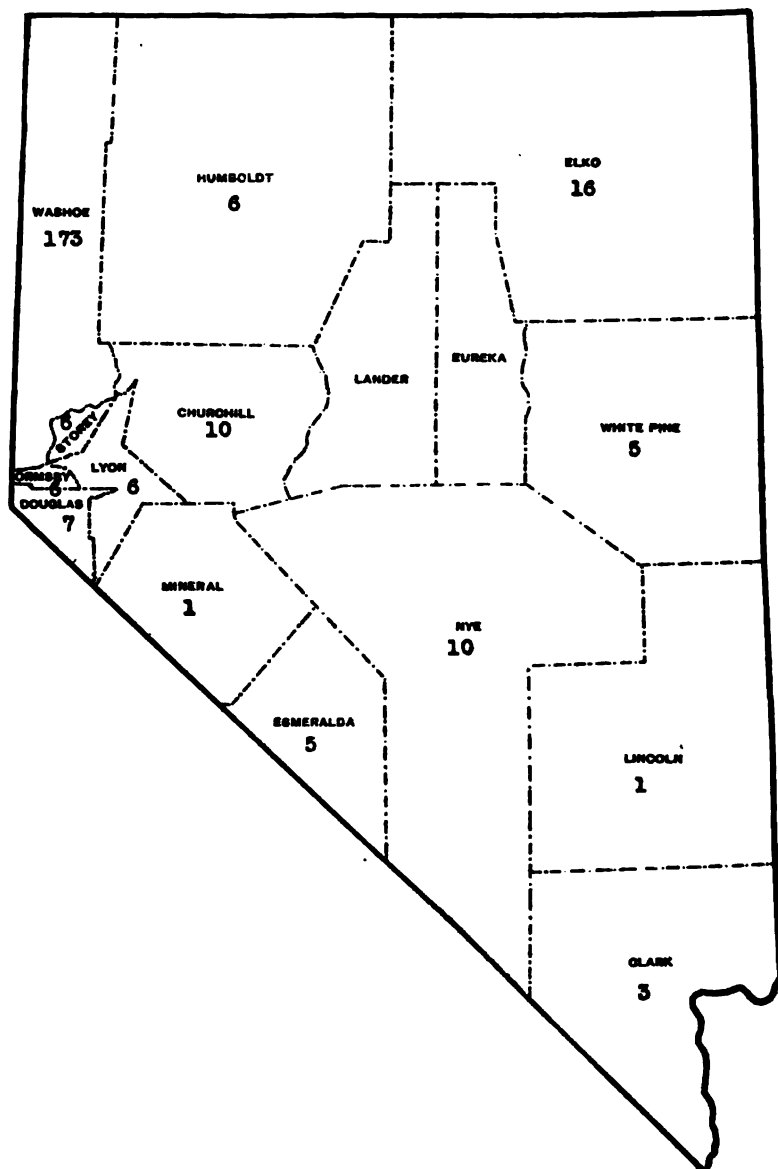


MAP 2.—Distribution of Nevada students at the State university by counties of residence for first semester, 1915-16.

accomplished by the administrative officers. At any rate, for the general welfare of the university, the reduction of this group should by one means or another proceed.

CONTINUANCE ON THE ROLLS OF THE UNIVERSITY.

The committee is of the opinion that the regulation with respect to the amount of work in which a student must pass in order to be con-



MAP 3.—Distribution of Nevada students by counties of residence for second semester, 1915-16.

tinued on the rolls of the university (quoted on p.71) is too lenient. It seems to be strengthened by the following (see p. 83 of the catalogue of April, 1916):

For regular sophomore, junior, or senior standing, a student's deficiencies must not exceed six college units, and he must take the full number of hours prescribed by the course.

The majority of regular students are of course candidates for promotion to the next higher class and as such are interested to make



MAP 4.—Distribution of students at the University of Nevada from California by counties of residence for first semester, 1915-16.

the standing prescribed in the rule just cited, but the extreme latitude of the other regulation referred to can hardly fail to result in burdening the university with a few individuals at least who could not justly be rated as serious students. In support of this assumption

the committee offers this quotation from the report of the council of administration¹ to the senate February 3, 1916:

Voted to apply the rules relating to deficient scholarship in the case of 11 students who did not pass in one-third of the work of the first semester, and to 14 others who passed in one-third of their work but in less than one-half. Voted later to permit 3 of the first 11 to register on probation.

DISTRIBUTION OF STUDENTS ACCORDING TO RESIDENCE.

The committee has believed that a somewhat more definite record of the areas from which the University of Nevada draws its students than has yet been included in this report is significant in the matter now under discussion and will be instructive to the citizens of the State. It has therefore had prepared various summaries and maps, which are submitted herewith.

Distribution of students at the University of Nevada.

	First semester.	Second semester.
Nevada.....	264	255
California.....	82	82
Other States and countries.....	42	26
Total.....	388	363

Map 2 shows the distribution by counties of residence of the students from Nevada enrolled during the first semester; Map 3 the distribution by counties of residence of the students from Nevada enrolled during the second semester; Map 4 the distribution by counties of residence of students from California enrolled during the first semester; and Map 5 the distribution by counties of residence of the students from California enrolled during the second semester. Other maps showing the counties in Nevada and California from which each of the principal colleges and schools of the university draws its students appear in the Appendix, pages 165 to 184.

Attention is especially called to four facts: First, the wide territorial distribution of the students from the home State; second, the preponderance in numbers of those residing in Washoe County; third, the large number coming from California; and, fourth, the surprisingly wide territorial distribution of these California students. It would be expected that the University of Nevada, being located close to the California line, would draw many students from adjacent portions of that State. The fact that so large a percentage of the California students comes from regions close to the large and excellent institutions situated near San Francisco prompts the deduction that the University of Nevada has in some cases served as a refuge for persons of indifferent scholarship. The averages of recently

¹ For a statement of the constitution and functions of this body, see p. 86.

admitted regular students from California, however, do not indicate that this group falls below the common standard of the institution. It was pointed out above that there are 19 special students from



MAP 5.—Distribution of students at the University of Nevada from California by counties of residence for second semester, 1915-16.

California. Association of this fact with those presented in the tabulation on page 75 is instructive.

The committee may sum up its conclusions and recommendations relating to the standards of the University of Nevada in these terms: The university is apparently maintaining what amounts to a double standard of entrance. That applied to regular students is on a par

with the standards of other reputable universities, and it is enforced; that applied to special students is flexible, indefinite, and largely dependent on the judgment of individual instructors. The line dividing the two classes of students is, moreover, not so clearly marked and difficult to cross as the committee judges advisable. The committee fears that the standards of the University of Nevada will always be open to misunderstanding until the institution reduces the number of special students, particularly those from other States, and makes it harder for those admitted as specials to obtain regular standing. The easy requirements for continuance in the university (not for class promotion, however) tend to accentuate the danger to which the reputation of the institution is exposed. The committee thinks that these depressing influences have been to some degree counteracted by the conscientious attitude on the part of the majority of the faculty toward academic standards. It nevertheless recommends—

(a) That the officers scrutinize with care the qualification of candidates for admission as special students.

(b) That the number of special students be largely reduced.

(c) That the minimum standard of scholarship required for continuance on the rolls of the university be raised.

SUMMARY OF RECOMMENDATIONS.

1. The careful scrutiny of the qualifications of candidates for admission to special standing.
2. The reduction of the number of special students.
3. The raising of the minimum standard for continuance on the rolls of the university.

Chapter VI.

EDUCATIONAL ADMINISTRATION OF THE UNIVERSITY.

In a previous chapter the committee has commended the excellent arrangement whereby the initiative in educational policies and the educational control of the university are placed by the regents definitely in the hands of the president and faculty. This has permitted the establishment of an educational organization which is well adapted for the work it has to do. While various features of this organization doubtless represent the growth of a number of years, the definite formulation of a code has only been worked out during the present administration. This code is modern in its spirit and should contribute increasingly to efficiency in administration. The suggestions which are offered deal only with minor features and do not affect any vital underlying principle of the plan.

The university senate, as the central lawmaking body, is composed of the president, vice president, deans, and heads of the various departments of the rank of full professor. Such a body should be and evidently is a positive force in the formulation of sound educational policy and in the upbuilding and maintenance of true university standards. The action of the senate in dealing with the difficult problem of grades furnishes a good illustration of its appropriate function. A committee of the senate examined the grades which had been given in all departments for a period of three years, and after a careful analysis recommended the application of a system of corrective figures so that the marks earned in the various departments might have more equal merit. The unanimous adoption of the report of this committee was not only a credit to the committee but a high testimonial to the ability and serious purpose of the senate itself.

There are a number of other university officers not now members of the senate whose presence in that body should confer a distinct benefit upon it and upon the university because of their vital contact with matters of educational policy. The librarian is such an officer. In some universities the librarian is given the rank of professor, without the title, however, in order that the assistance of this most important university department may be had in the deliberations of the lawmaking body. Certain departments in the public-service division which touch closely the instructional work of the

university and which are under the direction of men of university training and sympathies might be represented for similar reasons. The inclusion also of the chief financial officer, the registrar, and the administrative secretary may be advantageous when such positions carry real responsibility and are held by university-minded people.

The council of administration is composed of the president, vice president, the dean of the college of arts and sciences, the dean of the college of engineering, the dean of the college of agriculture, and dean in education and the dean of women. This council is rightfully the clearing house for many administrative troubles. It represents the larger divisions and interests of the university.

The duties of a council of administration can not and should not be definitely fixed. From time to time matters of widely varying importance will be handled, but the tendency should be for it to deal more largely with the broader policies involved in the interrelation of schools and the responsibilities of the university to the public and not so much with minor matters of discipline and control. Matters of routine detail—such as admission or advanced standing—which can be handled individually by the deans or the other officers should rarely come to the council for decision; and when they do, it should be rather to correct or establish an administrative precedent than to settle the individual case. In this council the deans can informally discuss administrative questions and so arrive at policies which will become more and more uniformly applied in the various colleges.

The committee is especially pleased to note the recent creation of the office of dean of women and the inclusion of this officer in the council of administration. Official recognition is thus given to a most important phase of the work of the university, the oversight and adaptation of college life and college study to the needs of women.

The committee is aware that there has been some public criticism in the State of what has been called the "deanship system," i. e., the administration of the various divisions of the university by deans responsible to the president. It has been argued that in a small institution like the University of Nevada such officers are superfluous and that the functions now assigned to them may easily be performed by the president himself or by committees. The committee does not share this view. There are several reasons why an organization substantially like that now existing at the University of Nevada is desirable even in a small institution.

Foremost among these is the fact that the vocational colleges of the university are in the critical period of development. Although of relatively recent foundation, all have now attained sufficient enrollments to justify a certain measure of segregation. They constitute real, not factitious, units. Nevertheless, with possibly a single exception, they have not thus far succeeded in establishing a close

and sympathetic cooperation throughout the State with the members of those professions for which they train. Each of the vocational divisions of the university is under the immediate and pressing necessity of interpreting itself, not only to the young people who may be disposed to avail themselves of its offerings, but also to the leaders in the calling for which it prepares recruits and to which it contributes the results of its scientific study. Each of these divisions needs the services of a master in the profession, who will build a school, and build it into the life of the State. This task is properly a part of the dean's responsibility. The dean, if he be well chosen, is, indeed, the official best qualified to perform it.

The administration of a division of a university, even of a small university, involves many matters of discipline and academic routine. These may, of course, be handled by committees or by designated members of the faculty, but such disposition of them is likely to result in a wasteful diversion of the teaching energies of the institution. If referred to a single administrative officer, these matters are more easily and effectively disposed of.

In the minds of those who object to the system of administration by deans there seems to be some misapprehension also as to the duties of a State university president. The post demands of its incumbent what is probably the most varied assortment of activities in the whole field of administration of corporate undertakings. It presupposes a versatility not called for in any other public office. For example, the State university president is expected to be by turns a good institutional manager, an astute financial director, a superior public speaker, an expert on higher education, a diplomatic and persuasive interpreter of his institution to the State law-making body, a constructive leader of the educational forces of the State, a publicist to whom thoughtful citizens may look for counsel on questions of great State or National concern. Nor does this summary indicate the whole cycle of activities which he is required to perform. The people hold him to a strict standard of excellence in all. They are impatient and prone to criticize if he fails measurably in any. It is manifest, however, that a president the major part of whose time is devoted to the details of internal administration will be quite unable to fulfill the more public demands of his office. The committee is persuaded that certain of these public activities are of primary, not secondary, importance. The president *must* be an educational leader in the State. He ought if possible to be a true educational statesman (although the tribe is small). Especially in the newer States the services of a wise and intrepid leader in laying the foundations for sound educational development are greatly needed. At least he must be an authority on higher education, and he must keep

himself posted on the rapid and manifold developments in this field. It is of vital concern to the university also that he should represent it adequately and acceptably on various public occasions. The mere institutional manager, who performs the duties of minor administrative officials together with those of general director, has little time or strength for these more public activities. It is partly to release the university president for this large and exacting service that the system of internal administration through deans and other officials has grown up. It now prevails in nearly all the best universities of the country. As in force at the University of Nevada, it has the committee's indorsement.

It is generally recognized that one of the first essentials to the development of vigorous university teaching and research is security of tenure, earned after a reasonable apprenticeship.¹ In administrative positions security of tenure is also desirable, but with this difference. Administration is by no means an exact science, and in the selection of officers of administration it must be recognized that the opportunity for error is large. The problem of selection is especially complicated when, as in the case of deans of colleges, teaching ability and leadership in a particular field of scholarship must also be taken into account. In the larger institutions a good teacher and an able scholar has often been sacrificed to make a poor dean. At the same time, there are probably as many cases where an indifferent scholar or teacher has been found to have the requisite tact, initiative, and leadership for administrative work. This prompts the suggestion that, as a policy, administrative work within a university should not be assigned, in the first instance at least, on an indefinite tenure basis. In the case of young men without administrative experience especially, the assignment might be to an acting deanship for a limited period of one or two years. This would give an opportunity, which is now too often lacking, for a determination of fitness.

One of the most important reasons for the creation of the office of dean is to release the professors from routine committee work—the most frequent reason given for the neglect of scholarship and the higher teaching functions. The fact was repeatedly brought to the committee's attention that the burden of committee duties had as yet scarcely been lightened by the appointment of the new administrative officers. The committee believes that, particularly in a small institution like the University of Nevada, the deans might well handle more of these matters directly than the present custom permits.

In the division of the teaching organization of the university into three colleges, (1) arts and science, (2) agriculture, and (3) engin-

¹ See Ch. II, p. 29.

earing, a logical plan has been followed. The committee believes, however, that the time has arrived when the establishment of the Nevada State Normal School and the Mackay School of Mines as equally distinct administrative units should be considered. The inclusion of the normal school in the college of arts and sciences and the Mackay School of Mines in the college of engineering seems to the committee unwise in the light of the demands of the State for practical results in these two important fields of training. These two functions of the university are treated more at length elsewhere in the report.¹ It is sufficient here to note that the change in the central organization would be but slight. The dean in education, who now occupies an anomalous position representing no responsible educational unit, would become the dean of the normal school and as such would retain his seat in the council of administration. The director of the Mackay School of Mines would become a member of the council of administration. No objection to either change could be raised on the ground of additional expense as both officers concerned are now receiving the maximum salaries.

The committee has noted a use of the term "school" in connection with the instructional divisions dealing with civil engineering and mechanical and electrical engineering which is not in conformity with the best practice. It is suggested that it be discontinued. These divisions are in reality departments of the college of engineering and should not be encouraged to develop school organizations. In university nomenclature² the word "school" is used to indicate a professional or technical division of a university which has as its minimum entrance requirement two years of college work. In this sense, it will be seen, that professional schools of a university represent a higher, instead of a lower, division than the college.³ At present the designation of the Mackay School of Mines also is equally out of harmony with the accepted nomenclature. The committee is persuaded, however, that there is a real demand that the mining instruction of the University of Nevada should be organized as a "school." Evidence of this is seen in the equipment of the physical plant and the large endowment, as well as in the fact that mining is the leading industry of the State and justifies the strongest and best organization for its technical instruction. The word "school,"

¹ See pp. 123 and 128.

² Cf. Report of special committee on university nomenclature, Proc. Assoc. Amer. Universities, 1909.

³ The term "normal school" stands outside this classification of the administrative divisions of a university. As a rule normal schools are not connected with collegiate institutions. Moreover, they are often on a different entrance basis, doing much work for which college credit could not properly be given. The committee has already expressed its approval of the consolidation of all higher educational agencies in Nevada in a single institution. In view, therefore, both of the common understanding of the term "normal school" and of the different status of the institutions designated by it in other States, there appears to be no necessity for changing the title of the division of the University of Nevada called by this name to conform to the nomenclature just mentioned.

while so far used in its more common sense of a teaching unit, should still be applicable in its more technical meaning as representing the ultimate aim of the Mackay School of Mines. Rather than change the name indicated by the founder, it would seem to be wiser to retain it and, as soon as conditions warrant, to make its university significance a reality.

No university organization is complete unless some provision is made for promoting helpful contacts with the public. This was evidently the purpose of the "Honorary board of visitors." As constituted this board can hardly be expected to render the most desirable service. The committee suggests that this board be supplanted by separate boards for the various divisions of the university, to be appointed by the regents upon recommendation of the head of the division concerned to the president. The number of such boards and the number of members on each are not as important as the idea of fostering a dignified medium of sympathetic contact with the public.

The character of the departmental organization will be of more vital concern in a few years than at present. The system in vogue at the University of Nevada is practically the same as that which prevails at other State universities. It is the result of inertia rather than of design. The oldest teacher of the highest rank is by virtue of this fact head of the department and responsible to the president for all matters in which his department has a duty to perform. This practice often results in many professors becoming heads of departments who have no administrative ability and sometimes are lacking as well in intellectual leadership. In small as well as large institutions there is a tendency to obviate difficulties of this kind once they become patent by dividing departments. The difficulties, however, are not removed by this method; in fact, they are only made for a time less obstructive. As an institutional policy the method is expensive. In place of team work, cooperative enthusiasm, and strongly planned courses, together with reasonably high standards, there are likely to be feverish individualism, little or no enthusiasm, poorly planned and badly coordinated courses, with widely varying standards. Constructive work is halted because of the atmosphere of antagonism and destructive criticism.

The university catalogue shows some 28 different departments, with a half of these manned by a single teacher. The library budget, submitted to the president on April 10, 1916, recognizes 28 distinct departments, apportioning the book, binding, and periodical fund among them in amounts ranging from \$5 to \$180. The committee is not in a position to criticize this apportionment, but merely mentions it to emphasize the impossibility of economical and prudent buying of books when such a large number of small units have to be taken into

consideration. Money for books, equipment, and teaching should be expended where it will give the largest returns to the students.

While the University of Nevada is not by any means alone among American universities in suffering from too great individualism, its effects are sufficiently serious to require remedial treatment. The committee would recommend that an attempt be made to work out what might be called a division system, which, for administrative purposes, shall take the place of many of the small departments. As far as possible, no division should be composed of less than four or five instructors. The division organization could be made most simple, the only officers necessary being a chairman and a secretary, or simply a chairman-secretary, elected from year to year. The plan would probably result in a grouping of departments somewhat as follows:

- I. The Language Division: English, German, Greek, Latin, Romance languages.
- II. The Physical Science Division: Mathematics, Physics, Chemistry.
- III. The Biological Science Division: Biology, bacteriology, home economics.
- IV. The Social Science Division: Accounting and law, economics and sociology, history and political science, philosophy.
- V. The Fine Arts Division: Music, art, domestic art (home economics department).
- VI. Physical and Citizenship Training Division: Physical training for women, physical training for men, military science, master of Lincoln Hall, matron of Manzanita Hall.
- VII. The Mining Division: Mining, metallurgy, geology and mineralogy, with certain representatives from other courses taken by mining students.
- VIII. The Engineering Division: Civil engineering, electrical engineering, mechanical engineering, with certain representatives from other courses taken by engineering students.
- IX. The Agricultural Division: Agronomy, animal husbandry, dairying, agricultural chemistry, veterinary science, with certain representatives from other courses taken by agricultural students.
- X. The Teacher Training Division: Education, psychology, practice teaching, instructors of special courses for teachers in other departments.

It is recognized that these groupings are necessarily more or less arbitrary. Nothing should prevent a member of the faculty from attending more than a single division meeting. In fact, any work to be done on study plans might well involve interdivisional conferences. The chief object to be gained is the opportunity for larger cooperation. It is conceivable, for instance, that a lump appropriation of \$570 for library purposes would meet the actual needs of the language division during the year better than the same amount distributed in five small nontransferable budgets for the single departments. (See Table 13.) In all of the divisions there should be no difficulty in finding the required administrative ability for handling reports, records, etc., which are now a burden upon many able teachers whose time is too valuable for such minor, though necessary, services. The extent to which a division acting

as a unit should be consulted with reference to the appointment of an associate instructor would have to be worked out in practice. But it is evident that a division which really gives constructive suggestions will in time win recognition for its recommendations.

TABLE 13.—*Library budget—Apportionment made Apr. 5, 1916, by the library committee of the \$3,050 allowed for 1916 for books, periodicals, and binding.*

Agronomy	\$45	Library committee	\$282
Animal husbandry	90	Mathematics	90
Art	25	Mechanical engineering	135
Biology	180	Military	20
Chemistry	180	Mining	135
Civil engineering	90	Music	15
Economics	90	Philosophy	45
Education	135	Philosophy added for 1916	30
English	180	Physical education, men	5
Geology	90	Physical education, women	20
German	65	Physics	90
Greek	65	Political science	90
History	180	President	25
Home economics	45	Romance	135
Latin	65	Romance, added for 1916, special	
Special for 1916 to be deducted		for Spanish and Italian	60
from 1917	3		
Law	45		3,050
Librarian	300		

Chapter VII.

TRAINING AND EXPERIENCE OF THE FACULTY.

The committee has not visited classes and has made no attempt to estimate the quality of teaching done by members of the university faculty. There are three commonly accepted tests, however, which indicate in a general way whether or not a faculty group is likely to possess power of intellectual leadership. These are (1) academic training, (2) teaching experience in college work, and (3) current publishing record.

The tables submitted herewith are made up from the returns sent in by the members of the faculty on a specially prepared blank. The extent of the academic training is shown approximately by the degrees held by the various individuals.

The degree of doctor of philosophy is conferred by reputable institutions only upon those who have successfully completed the equivalent of three years' advanced work beyond the regular A. B. curriculum. Out of 48 members of the faculty on the instructional side of the university work, 14 have received this highest mark of scholastic training. None of the instructors, only two assistant professors, and one associate professor hold this degree. The doctor's degree is but rarely given in engineering. Four other members of the staff hold advanced engineering degrees which represent a somewhat comparable amount of professional training. The master's degree, which is usually granted for one year of postgraduate study, is the highest degree held by 11 persons.

TABLE 14.—Training, experience, and publications of administrative officers and professors.

Title.	Department.	Academic training.		College teaching.		Publications in past two years.		
		Highest degree.	Institution.	Years at University of Nevada.	Years elsewhere.	Total years in college teaching.	Research publications.	Other publications.
President.....	Executive.....	A. M.....	Toronto.....	2				
Vice president.....	Accounting and law.....	None.....		26	0	26	0	0
Professor.....	Chemistry.....	Ph. D.....	Chicago.....	10	3	13	3	0
Do.....	Economics and sociology.....	do.....	do.....	14	2	16	2	0
Do.....	Military science.....	None.....	West Point.....	44	2	64	0	0
Do.....	Civil engineering.....	C. E.....	Wisconsin.....	9	0	9	0	2
Dean of women.....	History.....	Ph. D.....	Cornell.....	1	54	64	1	2
Professor.....	Latin.....	do.....	Munich.....	23	1	24	15	0
Do.....	Biology.....	A. M.....	Harvard.....	16	2	18	1	2
Do.....	Physics.....	Ph. D.....	Pennsylvania.....	7	64	134	1	1
Do.....	Mathematics and mechanics.....	do.....	Goettingen.....	7	3	10	0	0
Do.....	English.....	do.....	Chicago.....	9	7	16	0	1
Do.....	Agricultural chemistry.....	do.....	Johns Hopkins.....	7	0	7	10	0
Professor and dean.....	Education.....	do.....	Halle.....	1	18	19	0	0
Professor and curator.....	Geology and mineralogy.....	A. B.....	Illinois.....	7	5	12	5	0
Professor and dean.....	Agronomy.....	B. S.....	Wisconsin.....	7	2	9	0	2
Librarian.....	Library.....	B. L.....	California.....		3	28	0	0
Professor.....	Romance languages.....	A. B.....	Stanford.....	20	0	20	0	0
Professor and director.....	Mining.....	Ph. D.....	Columbia.....	3	8	11	1	9
Professor.....	Bacteriology and veterinary medicine.....	D. V. M.....	Cornell.....	10	2	12	3	2
Professor and dean.....	Mechanical and electrical engineering.....	M. E.....	Kentucky.....	13	0	13	2	2
Professor.....	Philosophy.....	A. M.....	Harvard.....	8	0	8	0	0
Professor and dean.....	Greek.....	Ph. D.....	do.....	6	5	11	0	0
Professor.....	History.....	A. B.....	Stanford.....	17	0	17	4	1
Do.....	Animal husbandry.....	M. S.....	Illinois.....	2	9	11	0	1

Officers and professors:

Number of names.....	25
Number of doctor of philosophy degrees.....	11
Number of master degrees.....	4
Number of advanced engineering degrees.....	2
Number of bachelor degrees.....	5
Number of veterinary degrees.....	1
Number without degrees.....	2

TABLE 15.—Training, experience, and publications of associate and assistant professors and of instructors.

Title.	Department.	Academic training.		College teaching.		Publications in past two years.		
		Highest degree.	Institution.	Years at University of Nevada.	Years elsewhere.	Total years in college teaching.	Research publications.	Other publications.
Associate professor.....	Home economics.....	B. S.....	Armour Institute.	15	0	15	0	2
Do.....	English.....	A. B.....	Chicago.....	8	8	11	0	9
Do.....	Art.....	None.....	Corcoran Art School.	9	9	9	0	0
Do.....	History and political sciences.	A. M.....	Stanford.....	1	2	3	0	0
Do.....	Education.....	Ph. D.....	Chicago.....	1	1	2	0	0
Assistant professor.....	Greek and Latin.....	do.....	Michigan.....	1	7	8	2	1
Do.....	Romance languages.....	A. M.....	Wisconsin.....	1	5	6	0	0
Do.....	Biology.....	Ph. D.....	Illinois.....	2	5	7	0	2
Do.....	Mechanical engineering.....	M. S.....	Brooklyn Polytechnic.	1	1	2	0	0
Do.....	Mining and metallurgy.....	E. M.....	Columbia.....	6	0	6	0	0
Do.....	Mechanical engineering.....	None.....	Swarthmore.....	5	1	6	0	0
Do.....	Dairy husbandry.....	A. M.....	Missouri.....	3	5	8	0	0
Do.....	German.....	do.....	Columbia.....	3	0	3	0	0
Do.....	Physical education for women.	B. S.....	do.....	4	0	4	0	0
Do.....	Public speaking.....	A. B.....	Nebraska Wesleyan.	3	11	14	0	0
Instructor.....	Music.....	B. M.....	Illinois.....	4	0	4	0	0
Do.....	Biology.....	A. M.....	Columbia.....	3	0	3	0	0
Do.....	Home economics.....	B. S.....	Cornell.....	2	0	2	0	0
Do.....	Chemistry.....	A. B.....	Stanford.....	2	0	2	0	0
Do.....	Mathematics.....	B. S.....	California.....	2	0	2	0	0
Do.....	Electrical engineering.....	M. E.....	Cornell.....	1	0	1	0	0
Do.....	Education.....	A. B.....	Beloit.....	2	0	2	0	0
Do.....	Physics.....	A. M.....	Missouri.....	1	2	3	0	0

Associate professors:

Number of individuals.....	5
Number of doctor of philosophy degrees.....	1
Number of master degrees.....	1
Number of bachelor degrees.....	2
Number without degree.....	1

Assistant professors:

Number of individuals.....	10
Number of doctor of philosophy degrees.....	2
Number of master degrees.....	4
Number of advanced engineering degrees.....	1
Number of bachelor degrees.....	2
Number without degree.....	1

Instructors:

Number of individuals.....	8
Number of doctor of philosophy degrees.....	0
Number of master degrees.....	2
Number of advanced engineering degrees.....	1
Number of bachelor degrees.....	5

TABLE 16.—*Training, experience, and publications of members of faculty of public-service division.*

Title.	Department.	Highest degree.	Institution.	Years at University of Nevada.	Years elsewhere.	Total years in college teaching.	Research publications.	Other publications.
Home economics.....	Agriculture extension.....	B. S.....	Wisconsin.....	2	1	3	0	7
Director.....	Food and drugs, weights and measures, and soils and waters.	do.....	Maine.....				0	0
Do.....	Agricultural experiment station.	M. A....	Nevada.....	18	0	18	2	2
Analyst.....	State mining laboratory...	B. S.....	do.....				0	0
Agricultural chemist.....	Agricultural experiment station.	Ph. D....	Johns Hopkins.....	7	0	7	10	0
Veterinarian.....	Agricultural extension.....	D. V. M..	Pennsylvania.....	2	8	10	0	1
Director.....	State veterinary service...	do.....	Cornell.....	10	2	12	3	2
Assistant agronomy....	Agricultural experiment station.	B. S.....	Nevada.....	2	0	2	0	0
Director.....	State hygienic laboratory.	M. S.....	Minnesota.....				0	0
Do.....	Agricultural extension division.	B. A.....	Nevada.....	2	0	2	0	6
Bacteriologist and veterinarian.....	State veterinary service...	D. V. M..	Pennsylvania.....	4	2	6	2	0
Dairy husbandman....	Agricultural extension....	B. S.....	Wisconsin.....	4	0	4	0	4

Members of faculty:

Number of individuals.....	12
Number of doctor of philosophy degrees.....	1
Number of master degrees.....	2
Number of bachelor degrees.....	6
Number of veterinary degrees.....	3

TABLE 17.—*Summary of degrees and publications.*

Rank.	Highest degrees.							Publications of the faculty.		
	Ph. D.	Master.	Adv. Eng.	Bach.	Vet.	No degree.	Total.	Number reporting research publications.	Number reporting other publications.	Number not publishing.
Professors.....	11	4	2	5	1	2	25	12	11	8
Associate professors.....	1	1	0	2	0	1	5	0	1	4
Assistant professors.....	2	4	1	2	0	1	10	1	1	8
Instructors.....	0	2	1	5	0	0	8	0	0	8
Total.....	14	11	4	14	1	4	46	13	13	28

PUBLIC SERVICE DIVISION.

Directors.....	0	2	0	2	1	0	5	2	3	2
Specialists.....	1	0	0	4	2	0	7	2	3	2
Total.....	1	2	0	6	3	0	12	4	6	4
Grand total.....	15	13	4	20	4	4	60	17	19	22
Duplicates.....	1				1			2	1	0
Total individuals..	14	13	4	20	3	4	58	15	18	22

The fact that 14 members of the faculty have received only the bachelor's degree indicates that a large proportion of the instructional work is being given by teachers whose academic training is but little better than that of some of the students in their classes. On further inspection of the individual cases of those possessing only the bachelor's degree it appears that of the nine members of the faculty of professorial rank three have been teaching in the university continuously for periods of 15, 17, and 20 years, respectively; one is engaged in library work; two have been at Nevada for seven years; one for four years; and the remaining two for three years. The two assistant professors are in lines of work for which training beyond the bachelor's or master's degree is rare. Of the five instructors, four have been in the university only two years, while the other has been there four years and is in a line of work for which a higher degree is seldom given.

Of those members of the faculty holding no academic degree, one is a graduate of West Point, another has studied at various art schools, a third was brought to the university for proficiency in practical shop management, and the fourth is the one who has been longest connected with the university, having seen 26 years of honorable service.

In the matter of previous collegiate teaching experience, 19 members of the faculty have had none before coming to the University of Nevada. Twelve of these, who now have professorial rank, have been at the University of Nevada for periods of 3, 4, 6, 7, 8, 9, 9, 13, 15, 17, 20, and 26 years respectively. Only 1 of the 12 holds the doctor's degree; 5 have a master's or an engineering degree; 4 possess the bachelor's degree, and 2 hold no degrees at all.

It seems, therefore, to have been the policy to bring teachers into the university with little or no experience and a minimum of academic training and to advance such persons to positions of professorial rank. That this policy is still in force is suggested by the fact that of the instructors none has the doctor's degree, while only one has had previous collegiate teaching experience. The committee recommends that in making future additions to the teaching staff the university demand that instructors shall either have had collegiate teaching experience or have done advanced graduate work, or both. It further recommends that an instructor be promoted to a permanent position in the university only when his interest in scholarship has been evidenced by the attainment of an advanced degree, by a worthy publication, or by exceptional success in teaching. Though the limitations of the doctor's degree are realized, it is as yet, except in technical lines, the only symbol which marks a man as dedicated to the ideals of the scholarly life.

In the accompanying tables a rough classification of publications which were reported by faculty members to the committee by title

has been attempted. Some 54 titles, classified under the head of research, were submitted by 13 different members of the instructional staff. Under the head of other publications 49 titles were submitted by 14 individuals. Twenty-eight faculty members reported no publications of any kind. Mention is not made of the publications of the members of the public service division in this connection, because the work of publication with them largely takes the place of the instructional work of the teacher.

No institution carrying the name of "university" has the right to disregard the obligations of leadership in the field of research. Wisely planned successful investigations vitalize all those who come in contact with them. The amount and quality of research done at the University of Nevada will be in almost direct proportion to the presence of men with scientific training, who are true to their scholarly obligations. This is more a matter of men than of libraries or equipment, although the advantages of laboratories and books can not be overlooked. The committee has already expressed the opinion that the research deliberately fostered by the university must for the present be adapted as far as possible to the needs and conditions of the State of Nevada. Nevertheless, it believes that in making new appointments in any department the university should take pains to select persons who show particular promise of creative ability and that it should reward with promotion those who have demonstrated productive power.

SUMMARY OF RECOMMENDATIONS.

1. The requirement of previous collegiate teaching experience or advanced graduate work as a condition to appointment on the university teaching staff except in the cases of assistants.
2. The requirement of an advanced degree, scholarly publication, or exceptionally successful teaching as a condition to promotion.

Chapter VIII.

WORK AND REMUNERATION OF THE TEACHING STAFF.

Central in any study of teaching and administrative efficiency is a consideration of the amount and character of work demanded of instructors and the salaries they receive for their services. In reports of recent surveys of State higher institutions in Iowa and Washington the Bureau of Education has suggested certain standards and methods of investigation relating to these matters which it is hoped may be generally useful to institutional officials. The application of the same standards and methods to a study of the work and remuneration of the teaching staff of the University of Nevada makes possible some interesting comparisons.

The standards bearing on the size of classes in which university and college teaching can be carried on with profit are as follows:

1. In a lecture a professor may meet effectively as many as can comfortably hear and see him.

2. In a recitation or quiz 30 in a section is probably the largest number that can be effectively handled, but the desirable maximum for classes of this type would be from 20 to 25.

3. In laboratory work it is commonly agreed that one instructor should be provided for every 15 or 16 students.

The number of lecture, laboratory, and quiz sections which one instructor can meet in a week will depend on the character of the work; whether it is elementary or advanced; whether it involves reading a large amount of written work; and whether it consists entirely of separate courses or includes two or three sections of the same course. It will also depend on the amount of outside reading, writing, and research which he is expected to do. In every case a certain variable amount of administrative and committee work will be carried by members of the faculty.

There are various ways of measuring the teaching loads borne by individual instructors; the commonest is probably in terms of the "teaching hour." A teaching hour is one hour a week spent in the classroom in the actual work of instruction. In reckoning the teaching hours of laboratory instructors many institutions divide the number of hours devoted to laboratory instruction by two or by three.

Students' programs of work are usually estimated in "credit hours" (or "semester hours" or "year hours"). A "credit hour" is one hour a week for a semester (semester hour) or a year (year hour) devoted to a classroom exercise, with its accompanying preparation. Usually, however, two or three hours of laboratory work are required as the equivalent of one hour of recitation or lecture in reckoning credit hours. This is on the assumption that every recitation or lecture hour presupposes two hours spent in preparation and that laboratory work demands little or no preparation on the part of the student.

It will be seen that the teaching hour as applied to the work of instructors is substantially the same as the credit hour by which the work of the student is measured. The teaching hour as a unit of measurement has a certain value. If it is the only unit applied, however, it fails to reveal the magnitude of the teaching burden borne by the departments and by individual instructors. For instance, an instructor in Greek may give four courses of three class hours a week each, with enrollments of 2, 4, 5, and 6 students, respectively. Such small classes in this subject in the smaller institutions are not at all uncommon. A colleague in English literature may give four courses of three class hours a week each, with enrollments of 15, 18, 25, and 50, respectively. If students do written work in connection with these courses—as would be the rule in both departments—it is clear that the teaching load of the instructor in English literature is many times heavier than that of the instructor in Greek. Even disregarding the review of the students' productions, the amount of energy required for the efficient conduct of classes enrolling from 15 to 50 is considerably greater than that demanded in classes numbering from 2 to 6. Yet the teaching hours of these two men are the same.

Probably no system can be devised which will measure accurately the work of college and university teachers; nor is one desirable. Such work involves many highly variable elements and depends for its success on imponderable personal talents and idiosyncrasies. On no account should it be mechanized or even subjected in any individual case to purely mechanical tests. Its very breath of life is freedom from these devices. Nevertheless, administrators of public institutions must to some extent apply quantitative measures to the work of the teaching staffs of the institutions under their charge, to prevent flagrant injustice to individuals or departments and to insure the efficient expenditure of the funds devoted to instruction.

In estimating the teaching loads borne by individual instructors the Bureau of Education has, therefore, made use of a relatively new unit as a cross-check on the teaching hour for purely administrative

purposes. This new unit is the "student clock hour." It may be defined thus: One student under instruction in lecture, quiz, or laboratory for at least 50 minutes net represents one student clock hour; for example, therefore, 20 students meeting four hours a week in recitation represent 80 student clock hours. It will be observed that the student clock hour does not discount laboratory hours, but reckons laboratory, lecture, and quiz exercises equally, hour for hour. For instance, a student taking a course in chemistry and spending one hour in lectures, one hour in quiz, and four hours in laboratory in a week can be counted as receiving six student clock hours of instruction.

The value of the student clock hour is that it serves as an index to the administration of the distribution of the teaching burden. Taken together with the teaching hours of instructors it may help in the adjustment of inequalities.

An examination of the teaching schedules of the members of any department indicates, of course, that no definite number of student clock hours can be fixed for each instructor. An average for a department which has a number of instructors may, however, safely be set up. The Bureau of Education has suggested that in an institution where research work is encouraged and expected it is reasonable to expect also a departmental average of 250 student clock hours per instructor per week. This, it is believed, might be a fair working average for the larger modern State universities. In a distinctively undergraduate college, on the other hand, where research is limited and where little or no graduate work is conducted, a departmental average of 300 student clock hours per instructor is regarded as a reasonable norm. In this connection it is worth while to note that usually an institution whose program is made up largely of laboratory work will generally record a larger number of student clock hours per instructor than an institution most of whose program consists of nonlaboratory courses.

The relation of the distribution of student clock hours to the salary paid in a given institution is close, and it is a matter of considerable importance to the teaching staff. For example, if the curriculum of an institution demands that each student shall be under instruction on the average 20 hours a week, then for every 500 students 10,000 student clock hours of instruction must be provided. If instructors carry an average of 300 student clock hours each, 33 or 34 instructors will be required to serve this student body of 500. Suppose the institution has \$67,000 to spend annually on teachers' salaries, and employs 40 instead of 33 instructors; the average load of student clock hours will of course be reduced, but so will the average salary.

Attention is now called to the following summary tables, which show for the University of Nevada the departments represented, the total number of instructors in each department (part-time teachers being reduced to a full-time basis), the average salary for each department, the average number of student clock hours for each department during the last two academic years:¹

TABLE 18.—*Instructors, salaries, student clock hours, in 1914-15.*

Departments.	Full-time instructors.	Total salary.	Average salary.	Average student clock hours taught by instructors in department.	
				First semester.	Second semester.
Accounting and law.....	1	\$3,000	\$2,400	69	101
Agronomy.....	14	\$2,750	1,893	142	100
Animal husbandry.....	1	2,400	2,400	156	129
Art.....	4	600	600	290	260
Biology.....	3	5,400	1,800	177	282
Chemistry.....	2	3,853	1,927	369	304
Civil engineering.....	14	2,661	1,905	226	279
Dairying.....	1	900	900	78	.....
Economics and sociology.....	1	2,400	2,400	87	66
Education and psychology.....	2	3,500	1,750	274	278
English.....	3	6,000	2,000	231	219
Electrical and mechanical engineering and mechanic arts.....	44	\$8,069	1,790	279	284
Geology and mineralogy.....	1	2,100	2,100	242	316
German language and literature.....	1	1,500	1,500	146	112
Greek language and literature.....	14	\$8,000	2,400	30	27
History.....	2	3,900	1,950	154	137
Home economics.....	1	1,800	1,800	222	282
Latin language and literature.....	14	3,000	2,400	106	114
Mathematics.....	2	3,461	1,730	274	241
Mining and metallurgy.....	14	4,000	2,666	87	106
Music.....	1	1,500	1,500	156	124
Physiol.....	1	2,400	2,400	301	248
Physical education for women.....	1	1,500	1,500	126	126
Romance language.....	1	2,400	2,400	269	224
Veterinary science.....	4	200	200	.....	104
Total.....	364	72,384	.....	4,706	4,363
Average.....	.....	1,978	.....	.....	.....
Enrollment of collegiate students.....	.....	.....	.....	345	336
Average student hours per student.....	.....	.....	.....	13.6	12.9
Total student clock hours.....	.....	.....	.....	7,678	7,262.5
Average per instructor.....	.....	.....	.....	209	186

¹ Detail tables from which the summaries are derived appear in the Appendix, pp. 147-149.² Note that \$600, the additional salary for deans, is added here.

TABLE 19.—*Instructors, salaries, student clock hours, 1915-16.*

Departments.	Full-time instructors.	Salary.	Average salary.	Average student clock hours taught by instructors in department.	
				First semester.	Second semester.
Accounting and law.....	1	\$3,000	\$3,000	80	115
Agronomy.....	1	1,500	1,500	176	281½
Animal husbandry.....	1	2,500	2,500	247½	169
Art.....	1	900	900	260	330
Biology.....	3	5,800	1,866	326	259
Chemistry.....	2½	3,700	1,708	451	424
Civil engineering.....	1½	2,722	2,041	232	196
Dairying.....	1	775	775	132	132
Economics and sociology.....	1	2,500	2,500	126	99
Education.....	3	4,000	1,333	189	247
Electrical and mechanical engineering and mechanic arts.....	4½	7,707	1,849	231	247
English.....	3	6,100	2,033	236	239
Geology and mineralogy.....	1	2,300	2,300	221½	202
German language and literature.....	1	1,500	1,500	169	116
Greek language and literature.....	1	2,600	2,400	36½	28½
History.....	2½	4,300	2,006	162	155
Home economics.....	2	2,000	1,500	158	209
Latin language and literature.....	1½	3,100	2,480	99	102
Mathematics.....	2	3,850	1,925	223	165
Mining and metallurgy.....	1½	4,000	2,666	127	106
Music.....	1	1,500	1,500	196	174
Philosophy.....	1	1,000	1,000	97	73
Physics.....	1	2,500	2,500	449½	391
Physical education for women.....	1	1,500	1,500	184	170
Romance languages.....	2	4,000	2,000	203	138
Total.....	38½	76,754	.....	4,809	4,767
Average.....	.....	2,002	.....	.....	.....
Enrollment of collegiate students.....	.....	.....	.....	388	363
Average student hours per student.....	.....	.....	.....	12.4	13
Total student clock hours.....	.....	.....	.....	8,498.5	8,857
Average per instructor.....	.....	.....	.....	221.6	218

From this table several interesting facts with reference to the work of instructors appear. The average number of student clock hours per instructor for the whole institution was in the first semester of the last academic year 221.6, and in the second semester 218. The range of departmental averages was from 27 to 451. The distribution of teaching loads among departments is very uneven. The departments most heavily loaded are biology, chemistry, physics, and art. The departments carrying the lightest loads (measured in student clock hours) are Greek, philosophy, accounting, Latin, and economics and sociology.

At the State University of Iowa the bureau found the average number of student clock hours per instructor for the year 1914-15 to be 252; at the Iowa State College of Agriculture and Mechanic Arts, 312; at the University of Washington, 333½; at the Washington State College, 214.4. The range of departmental averages was at the State University of Iowa from 71 in Greek to 501 in geology; at the University of Washington from 94 in mining engineering to 648.4 in zoology.

At first glance it would seem that the comparison is distinctly unfavorable to the University of Nevada. Several factors which are not revealed by the figures should be borne in mind, however. The first of these is the great disparity in size between the University of Nevada and the institutions cited above. The maintenance of a college of arts and sciences entails the provision of work in most, if not all, of the departments represented at the University of Nevada, even if some of the departments are patronized by very few students. Their establishment belongs to the necessary initial expense of a modern collegiate undertaking. With the growth of the institution more students enroll in the less frequented departments. The approximate equalization of the teaching loads, as measured in student clock hours, then becomes possible.¹ The presence in an institution of a number of departments which enroll very few students also lowers the institution's average of student clock hours. A small institution, therefore, which maintains a well-rounded college of arts and sciences may be expected to fall short of the standard proposed by the bureau for application to the larger State universities and colleges. It is perhaps worth noting that the classics and philosophy, which are among the departments showing the smallest number of student clock hours at the University of Nevada, commonly enroll in other institutions relatively small numbers of students.

The committee might summarize its views on the measurement of the work of instructors in terms of student clock hours thus. This method is valuable chiefly for three reasons: (1) Because it may reveal to the administration some of the inequalities in departmental teaching burdens, and so serve as contributory evidence in determining increases of departmental staffs; (2) because it indicates the relative expensiveness of various lines of work; and (3) because it furnishes an index of the institution's success in utilizing its teaching resources to their full capacity. An absolute equalization even of departmental teaching loads is of course out of the question in any institution, whatever its size and however carefully managed, but that many institutions may conform to the standards proposed above without overloading any teacher is believed to be possible. It may be of interest to the officers of the University of Nevada to note that a faculty of 38, if carrying an average load of 300 student clock hours a week, could have provided 11,400 student clock hours of instruction instead of the 8,496 actually given. This would have made possible an additional enrollment of 140 without additions to the staff.

¹ It should be emphasized again that the student clock hour represents only one method of measuring an instructor's burden. An instructor with small classes and a consequent low student clock-hour count may meet as many classes a week as a teacher whose total of student clock hours greatly exceeds the average.

SIZE OF CLASSES.

Classes of five students or less can rarely be justified, except in advanced work or in the graduate school or in courses which have just been established. Even courses enrolling 10 or less are expensive. Many small classes indicate in some cases the lack of adequate study of the curriculum or schedule by administrative officers, and in others an undue effort by departments to serve the whims or convenience of students in order to build up departmental enrollments. The number of small classes can often be reduced by alternation of courses. Large classes, on the other hand, unless they are lecture classes, usually entail inferior educational results. Classes of over 30 are at least open to question. Any considerable number of them generally shows a need for more instructors or a poor distribution of students or instructors. The committee presents below a tabulation of the classes by size at the University of Nevada during the year 1915-16.

TABLE 20.—*Size of classes, 1915-16.*

Students in classes.	Number of classes.	
	First semester.	Second semester.
1 to 5.....	67	73
6 to 10.....	53	56
11 to 20.....	34	40
21 to 30.....	24	19
31 to 40.....	10	8
41 to 50.....	6	8
51 to 60.....	3	2
61 to 70.....	1	1
Over 70.....	0	0
Total.....	198	207

It appears that over one-third of all the classes in the university are composed of from one to five students. The committee does not suggest that all of these small classes could be eliminated. It believes, however, that it should be possible to reduce the number of them by offering certain courses in alternate years and by withdrawing and combining others. It recommends that the administrative officers give this question of small classes careful consideration. The following table may assist the administration in making desired adjustments.

TABLE 21.—*Number of classes with an enrollment under six, 1915-16.*

Department.	First semester.						Second semester.					
	1	2	3	4	5	Per cent.	1	2	3	4	5	Per cent.
Accounting.....						10						10
Agromony.....		1			1	53 ¹				1		42
Animal husbandry.....			1			27		1			1	54
Art.....						10			1	2		50
Biology.....		2	1	2	1	57			1	3		50
Chemistry.....	1	2		1	1	36	6			3		57
Civil engineering.....	3		1	1	2	61	1	2	1	2		50
Economics.....						10				1		33 ¹
Education.....	1					19						10
Electrical engineering.....						10					2	40
English.....	3			1		15		1	1	1		16 ¹
French.....	3				1	40	3				1	45
German.....			1			12 ¹		2		1		47
Greek.....	1	1	1	1		100		2	1			100
History.....	1	1	4	3	1	63		3	3	1	2	50
Home economics.....			1	1		28						10
Italian.....					1	100						10
Latin.....		1		2	2	54		1	1		2	45
Law.....				1	2	50				1		50
Mathematics.....		2				18	1				1	20
Mechanic arts.....						10				2	1	54
Mechanical engineering.....				1		10	1		1		5	26
Metallurgy.....	1	2				38			1			20
Mining.....	1	1		1	5	73	1	1	1	2	1	70
Minerology.....						10						10
Music.....			1			28		1			1	57
Philosophy.....												
Physics.....		1				7		2				15
Physical education.....					2	40		1			1	20
Spanish.....					1	22						
Geology.....							1			3	1	73
Total.....	15	14	11	15	17	.....	16	16	12	24	19	.....

¹ No report.

An examination of this table shows that in the first semester 9 departments reported 15 classes in each of which there was but a single student; in the second semester 9 departments reported 16 classes of 1 student each. Ten departments reported 14 classes with but 2 students in each during the first semester. Further analysis of the figures may be made by the reader at his convenience. The percentage column at the right indicates the percentage of the teaching time (estimates in credit hours) of the department given to classes of from 1 to 5 students.

SALARIES.

The Bureau of Education is on record concerning the salaries which collegiate institutions, especially the stronger State institutions, should try to pay. It has declared that for the present an average salary of \$2,000 for a department should be regarded as a reasonable minimum. (This does not apply to subcollegiate departments, where a lower average may properly prevail.) The practice of the stronger institutions throughout the country indicates that this average will be necessary to command men of the desired quality. In departments which expect to retain men of distinction a higher average salary must be paid.

The situation at the University of Nevada, however, is such that this proposed standard of the average departmental salary can

hardly in fairness be applied. As will be noted in the foregoing tables, there are 13 departments each of which has but a single instructor. The minimum average salary for a department suggested by the bureau was worked out from a study of institutions where the number of instructors in most departments ranged from 4 to 15. The average instructional salary at the University of Nevada, \$2,002, is seen to be slightly higher than the proposed standard; but this very respectable average is due chiefly to the large percentage of full professors and heads of departments in the Nevada faculty, and the relatively small percentage of instructors on low salaries. This distribution of the teaching staff among the different academic ranks is another characteristic of the small institution. In justice to the instructing body at the University of Nevada the maximum salaries paid to the teachers of each rank should be compared with those paid by other institutions. For this purpose a table of the maximum and minimum salaries of State institutions is included in the Appendix, page 160. Certain comparisons with the State institutions in Iowa and Washington may be pertinent here. The average salary at the State University of Iowa was \$1,790. The minimum salary paid departmental heads was \$3,000 in 1914-15. In the same year the average salary at the University of Washington was \$1,754, and the maximum salary of a full professor \$3,000. The average salary at the Washington State College was \$1,631.50; the maximum salary paid full professors was \$3,000. In both States the bureau not only recommended the immediate increase of the average, but urged the payment of a higher maximum to men of professorial rank. Persons of the requisite training and ability to head university departments can not be secured or permanently retained for less than \$3,000. Indeed, as will be seen by consulting the table referred to, many institutions are paying full professors a very much larger remuneration than this. If the bureau was willing to recommend a considerable increase in salaries in communities where living expenses are relatively low, it surely has no hesitation in urging the same action upon the legislature and the university authorities in Nevada. The cost of living and especially the high rents in Reno subject the faculty of the University of Nevada to peculiar financial pressure. The committee emphatically recommends, therefore, that the salaries paid teachers of professorial rank at the University of Nevada be raised and that the maximum salary of full professors be placed at \$3,000.

SUMMARY OF RECOMMENDATIONS.

1. The serious consideration by the administrative officers of the large number of small classes.
 2. Increase in salaries and the establishment of \$3,000 as the maximum salary of full professors.
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Chapter IX.

COSTS.

In the preceding chapter some of the most important questions involved in institutional expenditures were discussed. The analysis of costs attempted in this chapter is not the usual report of receipts and expenditures primarily by funds—State, Federal, local, private endowment, etc.—but rather a classification of expenditures with reference to their educational purposes. In a business concern this process is called cost accounting. Under Federal and State laws very little accounting of this kind has been required of institutions of higher education, although each year there have been more and more frequent calls for statements involving this element. As yet, however, the forms in which institutional expenditures are reported differ greatly.

The committee has had prepared and submits herewith an exhibit of the expenditures of the University of Nevada, arranged in a form identical with that used by the Bureau of Education to summarize the financial operations of the State institutions of Iowa and Washington in connection with the recent surveys of these institutions. Within this limited group of institutions, therefore, substantially accurate comparisons may be made. In order that the tabulation may be clear, the following explanation is offered:¹

The total expenditures for the year are first divided into two main groups: *Educational expenditures* and *extension and service expenditures*. The educational expenditures are then divided into three separate categories: *Construction and land*, *special and rotating funds*, and *operating expenditures*.

The category construction and land includes expenditures for direct additions to the plant, to provide for growth in enrollment, together with outlays for ordinary furniture of new buildings. Special and rotating funds include expenditures from prize funds, boarding and rooming departments, and special funds available only for specific purposes apart from instruction. These two classes of expenditures are in a certain sense entirely independent of the cost of operation of the educational plant.

¹ The explanation of the form for the reporting of expenditures in this chapter is taken for the most part from the report of the survey of the State higher educational institutions of Iowa, Bulletin, 1916, No. 19.

The category operating expenditures includes all expenses for the annual maintenance of the institution aside from dormitories and boarding departments. It is further analyzed into *educational equipment and supplies*, *instruction*, and *general operating expenditures*. The latter may perhaps more aptly be termed *overhead expenses*. The following may make this clear:

Total expenditures....	{ Educational. Extension and service.	{ Construction and land. Special and rotating fund.	{ Educational equipment and supplies. Instruction. General operating expenses (overhead expense).
		{ Operating expenditures.....	

Under operating expenditures the first subdivision, *educational equipment and supplies*, includes in addition to purely departmental supplies the expenditures for books and library supplies. The second subdivision, *instruction*, includes the salaries of the deans and faculty members, but not those of the president, other purely administrative officers, and librarians. The third, *general operating* or *overhead expense*, includes the salaries of administrative officers, janitors, etc., in addition to other expenditures essential to the maintenance of the work of the institution.

TABLE 22.—*University of Nevada—Summary of expenditures, 1914-15.*

Total expenditures, \$221,492.04.	{ Educational expenditures, exclusive of extension, \$167,069.61.	{ Construction and land, \$3,151.95.	{ Educational equipment and supplies, \$13,760.32.	{ Arts and sciences, \$53,815.81.
		{ Total operating expenses, \$139,717.96.	{ Instruction, \$78,391.87.	{ Engineering, \$15,785.16.
		{ Special funds, \$19,199.70.	{ General operating expenses, \$47,565.77.	{ Agriculture, \$7,790.90.
				{ Summer school, \$1,000.
		{ Extension and industrial service work, \$54,422.43.		

TABLE 23.—*University of Nevada—Summary of expenditures, 1915-16.*

Total expenditures, \$284,838.80.	{ Educational expenditures, exclusive of extension, \$205,069.24.	{ Construction and land, \$2,204.21.	{ Educational equipment and supplies, \$28,277.45.	{ Arts and sciences, \$63,490.38.
		{ Total operating expenses, \$174,157.56.	{ Instruction, \$33,773.97.	{ Engineering, \$13,031.26.
		{ Special funds, \$28,727.47.	{ General operating expenses, \$62,106.14.	{ Agriculture, \$5,349.
				{ Summer school, \$1,903.33.
		{ Extension and industrial service work, \$79,749.56.		

With the aid of one more factor in addition to those already exhibited in the tables described, certain fairly definite information concerning the average cost per student may be obtained. This factor is the average number of students in attendance. This is not the same as the catalogue enrollment. The usual catalogue statement of enrollment includes all students who have attended the institution during any part of the year of 12 months. Often the summer enrollment is large. As a rule the number of students in actual attendance rises from the opening of college in September for about two weeks to a maximum and then declines, because of withdrawals, until the close of the term. The second term usually opens

with increased numbers, again reaching a maximum shortly after the opening date and then gradually declining until the close of the year. An average of the two high tides in enrollment may under very liberal interpretation be regarded as the average attendance. The average attendance computed in the fashion described for the year 1914-15 at the University of Nevada was 313. The catalogue enrollment was 388. For the year 1915-16 the average enrollment was 329.5. The catalogue enrollment was 441.

To determine, then, the average cost per student the items listed in the first tabulations under the heading of *operating expenditures* (including the total *educational equipment and supplies*, the total *general operating expenses* and *cost of instruction*), less the expenditures for the summer term, are taken. The average attendance for the same year is then used as a divisor. The two following tables show the average cost per student for the years 1914-15 and 1915-16:

TABLE 24.—*Per capita cost per student based on the average enrollment.*

	1914-15	1915-16
High tide of enrollment for first semester	310	328
High tide of enrollment for second semester	316	331
Total	626	659
Average enrollment for the year	313	329.5
Total expense	\$138,717.96	\$172,254.23
Average expense per student	\$443.18	\$522.77

The average cost per student figured in the same way was, for the year 1914-15, \$275.50 at the State University of Iowa; \$271 at the Iowa State College of Agriculture and Mechanic Arts; \$192.77 at the University of Washington; and \$289.79 at the Washington State College.

For reasons suggested in the preceding chapter, it is to be expected that the per capita cost at the University of Nevada will be high as compared with universities of larger enrollment. The necessity of supporting almost as many departments as an institution of much more numerous enrollment entails a rather formidable unit expense. Moreover, in the smaller institutions there are fewer opportunities for departmental economies. Probably certain economies such as preventing the establishment of new departments, supplying (within limits) the need of new courses by utilizing men from allied departments, and encouraging the rotation of advanced courses may be practiced. But even so, the unit cost will still undoubtedly remain higher than that of universities of five or ten times the enrollment of the University of Nevada. The usefulness of calculating the cost per student is not so much for purposes of comparison with other institutions, although this has a certain value, as for the information of

the institution itself, in order that it may compare its expenditures from year to year. The object of efficient management should be to make a better university, not a cheaper one. If the university can be made better and the unit of expense at the same time reduced, the achievement will be worth while. No one who has the interests of the State and of higher education at heart, however, would advise the lowering of standards or a decrease of salaries for the sake of reducing expenses. Economies in university administration can be safely effected only by a university president who, as an expert in university education, can plan for the future, and upon whom rests the responsibility for resisting the innumerable pressures for expenditures for purposes unrelated to the larger policies of the institution.

TABLE 25.—*University of Nevada—Student clock-hour costs, 1915-16.*

Departments.	Salaries.	Departmental equipment.	Overhead expenses.	Total expenses.	Student clock hours.			Student clock-hour cost.
					First semester per week.	Second semester per week.	Total for year.	
Agronomy.....	\$1,550.00	\$713.45	\$740.26	\$3,003.71	176	281½	8,235	\$0.3647
Animal husbandry.....	2,845.21	1,572.38	1,444.78	5,862.37	247½	189	7,497	.7819
Art.....	900.00	20.60	301.09	1,221.69	260	330	10,620	.1150
Biology and botany.....	5,793.28	2,324.11	2,654.81	10,772.20	326	259	10,530	1.0280
Chemistry.....	4,802.80	2,219.58	2,198.56	8,920.94	465	424	16,002	.6575
Commercial.....	1,800.00	745.88	832.62	3,378.50	80	115	3,510	.9625
Civil engineering.....	2,613.63	54.27	839.83	3,497.73	232	196	7,704	.4423
Dairying.....	900.00	1,011.94	625.31	2,537.25	.....	132	2,376	1.0679
Economics and sociology.....	2,649.96	.....	866.87	3,516.83	126	72	8,564	.9867
Education.....	7,450.00	217.85	2,507.79	10,175.64	189	247	7,846	1.2966
Electrical and mechanical engineering and mechanic arts.....	7,281.25	2,186.00	3,096.28	12,563.53	231	247	8,604	1.4602
English.....	6,321.51	.....	2,067.46	8,388.97	236	239	8,550	.9812
Geology and mineralogy.....	2,300.04	34.35	763.46	3,097.85	221½	202	7,623	.4064
Greek and Latin.....	4,999.96	3.80	1,636.48	6,640.24	127	124	4,518	1.4697
History.....	3,999.96	.....	1,308.19	5,308.15	162	155	5,706	.9303
Home economics.....	3,053.71	296.29	1,095.72	4,445.72	158	209	6,606	6.729
Mathematics.....	3,849.96	.....	1,259.13	5,109.09	223	165	6,984	.7315
Mining and metallurgy.....	3,236.38	979.16	1,378.69	5,594.23	127	105	4,176	1.3396
Modern languages.....	5,499.96	.....	1,798.76	7,298.72	372	254	11,268	.6475
Music.....	1,500.00	103.18	524.32	2,127.50	196	175	6,678	.3184
Philosophy.....	1,600.00	.....	523.28	2,123.28	27	75	1,836	1.1564
Physics.....	2,872.51	1,956.02	1,579.17	6,407.70	448½	391	15,111	.4240
Physical education (women).....	1,631.00	52.30	550.53	2,233.83	184	170	6,372	.3506
Totals—Instructional departments.....	79,051.12	14,491.16	30,563.19	124,135.47	4,814½	4,736½	171,918	.7221
Library.....	.....	2,930.54	958.43	3,888.97	.....	.....	.....	.....
Military science.....	1,436.19	52.71	486.95	1,975.85	.....	.....	.....	.....
Physical education (men).....	1,200.00	113.10	429.45	1,742.55	.....	.....	.....	.....
Training quarters.....	.....	162.15	53.03	215.18	.....	.....	.....	.....
Totals, including non-instructional.....	81,687.31	17,749.66	32,521.05	131,958.02	.....	.....	.....	.....
Extension and industrial service.....	79,749.56	.....	26,082.01	105,831.57	.....	.....	.....	.....
Five-sixths university farm.....	10,527.79	.....	3,443.12	13,970.91	.....	.....	.....	.....
Veterinary science.....	183.33	.....	59.96	243.29	.....	.....	.....	.....
Grand totals.....	.....	.....	62,106.14	252,003.79	.....	.....	.....	.....

The actual cost of different departments the committee has found it exceedingly difficult, perhaps impossible, to determine. The nearest approach that could be made seemed to be to secure the cost

of a student clock hour in each department. This has been done and appears in the last column of Table 25. It was obtained by adding the total amount paid for salaries in each department and the amount spent for departmental equipment and supplies. The general operating expense or overhead expense was divided among the separate departments in accordance with the ratio which the salary budget for each department bore to the general salary budget. This amount, as its proportion of the overhead, was then added to the two departmental items already mentioned, and the total divided by the number of student clock hours for the department. The committee would like to add a word of caution against the drawing of too wide inference from this table. As contributory evidence it may have some value, however.

Reference has already been made to the separation of the office of the president of the University of Nevada from direct oversight and control of the finances of the institution and to the new system of financial management about to be installed, which is designed to center responsibility for these matters once more in the president. The committee was asked to give careful consideration to this new system, which was devised partly with a view to overcoming some of the local objections raised against the financial administration of the university. The report prepared by Mr. W. B. Castenholz, formerly comptroller of the University of Illinois, has been read and its recommendations with reference to the desirability of providing means for facilitating the preparation of cost reports have been considered.

The local criticisms of the old system were: (1) It did not provide any easy and accessible means by which the public could be informed regarding the use of university funds. (2) It did not provide for an accounting of departmental budgets. In support of this criticism the committee was informed that budget sums, though allowed, were found not to be available, the supposition being that other expenditures had been made which encroached on the departmental allowance. (3) It did not provide a classified report of expenditures upon which a satisfactory budget could be built. (This was given as the reason for the lack of budget control by heads of departments, noted above.) (4) The business office was separated from the president's office, making the educational authorization of expenditures difficult. (5) Frequent balances were not provided for.

In support of the old system, it was contended that, with a few supplementary changes, all the objections noted above might have been overcome. While this may be true, the fact remains that an expert in university accounting, after a careful examination of the system in force, recommended such a large number of changes that the system about to be installed is practically a new one. The com-

mittee believes that if the new system is installed and kept up with the cooperation of the educational and business offices, it should not only remove the local objections to the university's financial administration, but should also furnish a basis for future cost accounting which will be of great value to the university. Attention is called to the fact, however, that the installation of any special system of accounting is of far less importance than its faithful and businesslike administration.

With the cooperation, which is in any event essential, between the comptroller's office and the president's office, there seems to be little need for the rather elaborate order and voucher record in the president's office which the new system provides. There should, of course, be no question of the president's responsibility or authority. Every officer of the University of Nevada, as of practically every other State university, is in effect using delegated authority from the regents, through the president. Such a relation grows out of the responsibilities of the educational trust which centers in the regents and which must find a unified agent for expression in the chief executive of the university. The business officer is of necessity the expression of the educational trust in business terms.

The installation of the new system in all its details will probably be found impracticable of introduction at one time, but the main features of the order system, budget and control accounts, and encumbrance ledger may be worked out from the start. The perpetual inventory should be begun. The creation of a general stores department, the changes in the registration system, the central stenographic bureau, and the other valuable minor recommendations of the report may well become parts of the task of the new comptroller as he gradually masters the details of his position. The committee congratulates the university upon having made this careful study of the functions of its business office.

BUILDING COSTS.

The committee has also undertaken a study of the square feet of floor space provided for each student and the cost thereof. It is hoped that the results of this study may help the authorities to estimate the extent of building operations which will be required to house adequately the educational work of the institution as the enrollments increase. The study is similar to one made in connection with State higher educational institutions of Iowa. In explanation of it the committee quotes in substance from the Iowa report as follows:

In listing buildings occupied for educational purposes an attempt has been made to classify the space which they comprise roughly under two headings: "Space used in common," as library, gymna-

sium, heating plant, auditorium; and "instructional space," i. e., space used for classrooms and laboratories. This division can, of course, be only approximate. The total floor area of each building has been taken, including corridors, closets, stairs, etc. Dormitories and residences have been omitted. Where dormitories are provided by a State, it is only reasonable that the income from them should fully cover all maintenance, cost, repairs, and renewal of equipment, and pay at least 3 per cent income on the investment. The erection of dormitories must be based on a desire to provide adequate living accommodations for students and is entirely separate and distinct from the provision of educational buildings.

In determining the square feet of floor space provided per student the estimated average attendance during the present college year, 1915-16, was taken. This average attendance has been calculated according to the method described earlier in this chapter. It will be apparent that, in considering building accommodations, we are only concerned with providing adequately for the average number actually on the campus at one time during the college year. Using these factors, the following summary tables have been compiled:¹

TABLE 26.—*Cost of buildings per square foot.*

	Cost.	Square feet of floor.	Cost per square foot.
Space used in common.....	\$41,102.16	18,181	\$2.26
Class and laboratory space.....	188,889.09	86,847	3.31
Total.....	229,991.25	78,028	3.06
COST PER STUDENT.¹			
Space used in common.....	124.55	55.1	2.26
Class and laboratory space.....	571.48	172.2	3.31
Total.....	696.03	227.3	3.06

¹ Average enrollment of students, 330.

Certain comparisons with the amount of space provided for each student and the cost of it at the Iowa State institutions are of interest. The State University of Iowa provides 237.7 square feet of floor space per student; the Iowa State College of Agriculture and Mechanic Arts, 248 square feet. of floor space; and the Iowa State Teachers College, 242 square feet. Both the State University of Iowa and the Iowa State College of Agriculture and Mechanic Arts reported fewer square feet of space used in common (47.7 and 50.5 square feet, respectively) than the University of Nevada. Both institutions were found to stand in urgent need of library and auditorium accommodations, however. The average cost per square

¹ Detail tables appear in the Appendix, p. 168.

foot of floor space in six buildings recently erected at the Iowa institutions was \$2.96. The highest average cost per square foot of floor space for the whole plant was \$3.16, reported by the Iowa State College of Agriculture and Mechanic Arts.

Comparing these figures with those given in the preceding table, it appears that less space is provided for each student at the University of Nevada than at any of the Iowa institutions, and that relatively Nevada falls below, particularly in instructional space. (Allusion is made in Chapter X to some of the more urgent building needs.) The average cost per square foot of all buildings at the University of Nevada runs close to that reported for the Iowa institutional plants. The cost per square foot of two recent substantial buildings at the University of Nevada, as shown in the following summary, is considerably higher.

TABLE 27.—*Cost per square foot of floor space of the two newer buildings.*

	Square feet.	Cost.	Per square foot.
School of mines.....	11,568	\$62,730	\$5.01
Electrical building.....	7,158	40,000	5.58
Total.....	18,726	122,730	7.08

Chapter X.

ORGANIZATION AND NEEDS OF SEPARATE DIVISIONS OF THE UNIVERSITY.

The committee proposes to discuss in the present chapter the organization, equipment, and functions of the principal teaching divisions of the university, to point out the major needs of these divisions, and to offer recommendations bearing on their administration and support.

THE COLLEGE OF ARTS AND SCIENCES.

The college of arts and sciences is the core of the university and its oldest division. As has already been indicated, it is in more senses than one the heart of the university. To illustrate this statement further and to throw light on the general principle of collegiate organization, the committee quotes a portion of the report of the dean of the college of arts and sciences made to the president December, 1916:

Under the plan of organization in force in this university, a department is classified for administrative purposes in the college to which its work primarily belongs. In case all of the courses it offers are open without restriction to all qualified students of the university, it is included in the college of arts and science. In case a department offers some courses open without restriction to all qualified students, and other courses of a technical character open only to restricted classes of students, it is included in the college of arts and science and in one or both of the other colleges, but is counted as belonging primarily to the college of arts and science. Such departments, specifically, are English, mathematics, chemistry, physics, geology and mineralogy, zoology, and botany. With these should be mentioned military science and physical education for women, which can hardly be said to belong primarily to any single college. In case a department offers only technical courses open to restricted classes of students, it is classified in either the college of agriculture or the college of engineering, or, if it is a requirement of students in both colleges, it is classified in both.

Under this organization of the several colleges, each with its own curricula and degrees, a student is registered in that college where he elects most of his courses, or for the degrees of which he expects to become a candidate. The college of arts and science now contains somewhat more than one-half of the entire student body, its percentage of the students in 1915-16 being 56 per cent as compared with 27 per cent in engineering and 17 per cent in agriculture. Furthermore, its growth has been more rapid than the growth of the other two colleges. Nearly all of the instruction given arts and science students is provided by the departments belonging primarily to this college. The only important exception is the department of home economics, which is one of the two schools in the college of agriculture. Other departments classified

primarily in agriculture or engineering provide instruction for arts and science students only to a very limited extent.

On the contrary, arts and science departments provide a large part of the instruction given students registered in the other colleges. Excluding courses in applied mathematics and in applied sciences, and including only those recognized as primarily belonging to the college of arts and science, this college gives from 48 to 73 per cent of the instruction to students registered in the school of home economics, from 18 to 39 per cent to students in the school of agriculture, from 42 to 46 per cent to students in the Mackay school of mines, from 30 to 42 per cent to students in the school of mechanical and electrical engineering, and from 30 to 45 per cent to students in the school of civil engineering, the range in each of the schools depending upon the manner in which its students use their free electives. The minimum in each school represents the relative amount of arts and science work regarded as indispensable in the preparation of its students. All the arts and science courses so specified represent the indispensable part which a college of agriculture and mechanic arts would be compelled to provide for the students in addition to the technical courses.

By reason of these facts its laboratories are becoming overcrowded. Nearly all departments in the languages, the social sciences, and mathematics are seriously hampered for want of room. Some recitation rooms are used by several instructors, a condition which, in the want of offices for many of the instructors, makes it impossible for them to be available to students for conference.

The committee is recommending later the provision of separate buildings for agriculture and education. Should such buildings be provided, the congestion of which the dean speaks, the existence of which the committee verified by its own observations, would be largely remedied. Attention is called to it here partly to emphasize the handicap under which the college of arts and sciences labors and partly to reinforce the recommendations which the committee is about to make.

THE MACKAY SCHOOL OF MINES.

The committee has been impressed with the great development of mining in Nevada. It is, and so far as can be foreseen will continue to be, the principal industry of the State for many years to come. As the training agency for the leaders in this industry, the Mackay school of mines, now administered as one of the schools in the college of engineering, deserves first mention among the technical divisions of the university.¹ The committee is convinced that the Mackay school ought in time to be the equal of any school of mines in the United States. That it has thus far failed to attain the highest degree of efficiency does not appear to be the fault of any one person, but seems rather to have been caused by certain conditions which it is believed the recommendations contained in this report will help to remedy. The rapid development of newer competing lines of engineering work and a recent change in the directorship were undoubtedly factors in the decline in the enrollment of

¹ The rather loose use of the word "school" in connection with this and other administrative divisions of the university has been alluded to.

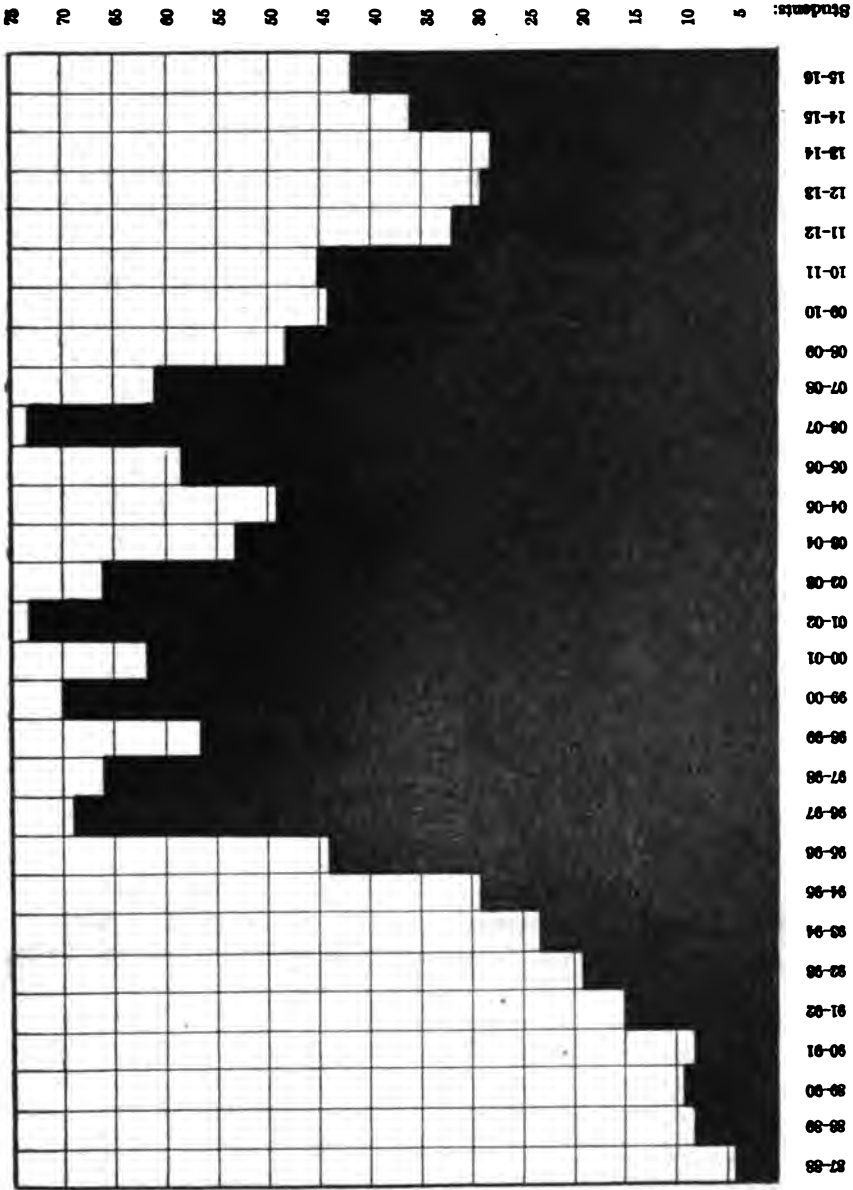


FIG. 11.—Growth of College of Mines, University of Nevada.

the school beginning in 1911-12 and continuing through 1913-14. The curriculum in mining has lately been reorganized on approved lines, with strong emphasis on a high standard of achievement in the practical mining subjects. Since the beginning of the year

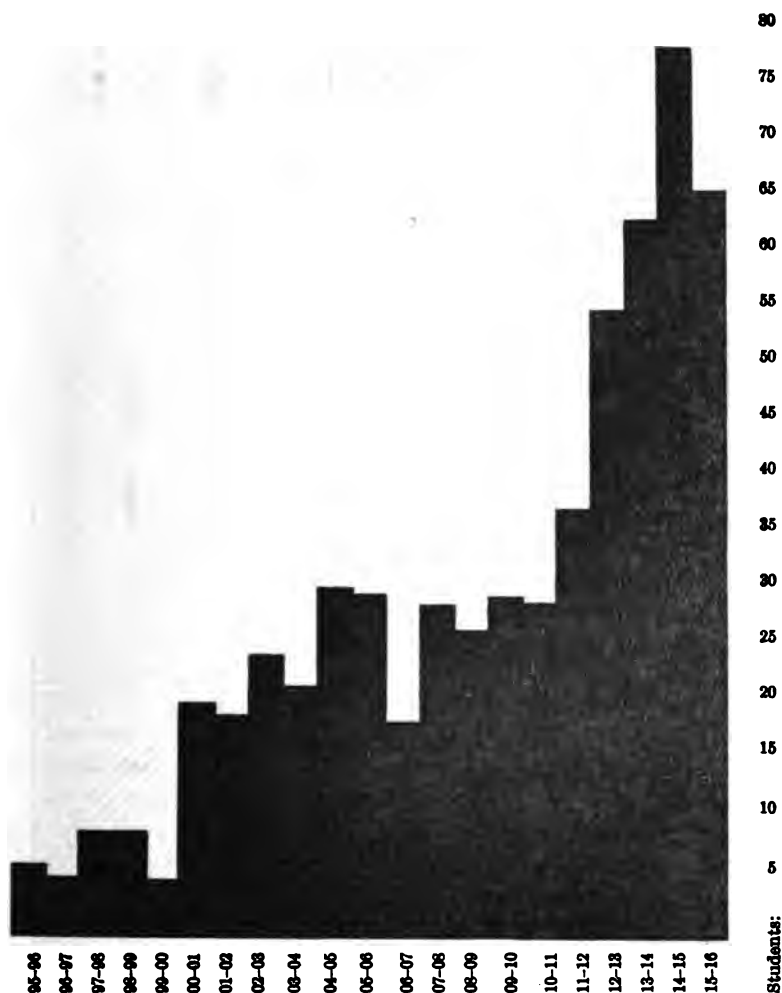


FIG. 12.—Growth of mechanical and electrical engineering, University of Nevada.

1914-15 the enrollment has been increasing. The enrollment of the school in comparison with that of the other divisions of the college of engineering and with that of the college of engineering as a whole is shown in the accompanying table and graphs.

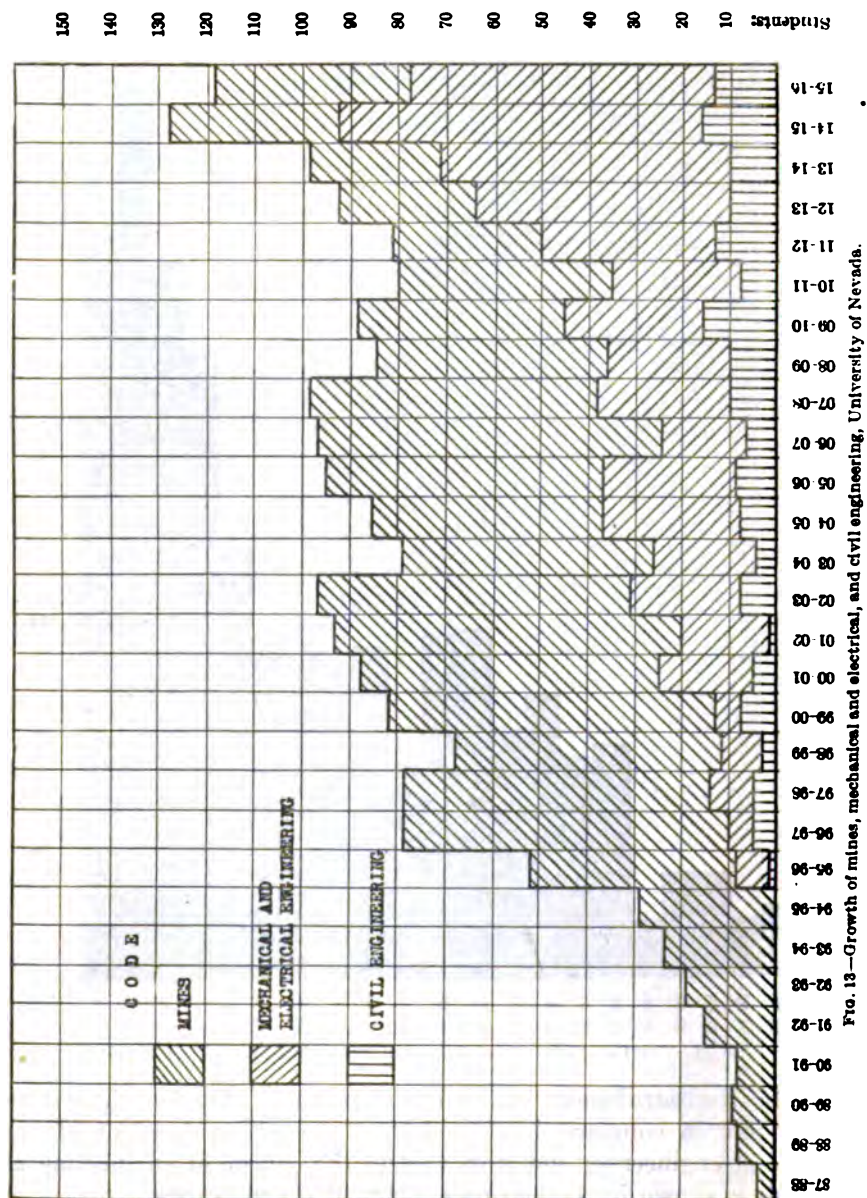


FIG. 13.—Growth of mines, mechanical and electrical, and civil engineering, University of Nevada.

TABLE 28.—*Enrollment in mining and engineering, 1887-88 to 1915-16.*

Year.	Mines.	Mechanical and electrical engi- neering.	Civil engi- neering.	Total.
1887-88.....	4			4
1888-89.....	8			8
1889-90.....	9			9
Fall term of 1890.....	8			8
1891-92.....	15			15
1892-93.....	19			19
1893-94.....	23			23
1894-95.....	29			29
1895-96.....	44	6	2	52
September, 1896-December, 1897.....	69	5	5	79
1898.....	66	8	5	79
1899.....	57	8	3	68
1900.....	70	5	7	82
1901.....	62	20	5	87
1902.....	73	18	2	93
1903.....	66	24	7	97
1903-4.....	53	22	4	79
1904-5.....	49	30	7	86
1905-6.....	58	29	8	95
1906-7 (mining boom).....	73	18	6	97
1907-8.....	61	28	10	99
1908-9 (Mackay building).....	48	26	10	84
1909-10.....	44	29	16	89
1910-11.....	45	28	7	80
1911-12 (Electrical building).....	32	37	13	82
1912-13.....	29	54	10	93
1913-14.....	28	61	10	99
1914-15.....	36	76	18	128
1915-16.....	42	64	13	119

For the Mackay school of mines to meet the most pressing demands of the State it will be necessary to increase the staff and to add a small amount of equipment. The committee recommends especially the appointment of an expert in mining prospects and the development of small properties. Such a man should spend a large part of his time in the field, making careful study of properties and giving assistance to those operators who for lack of technical direction may be wasting their own and other people's money. At the same time, he should be able, with the cooperation of the other members of the mining staff, to make and maintain an inventory or perpetual survey of the mining interests in Nevada. Such a survey would be of great benefit to the State in restoring confidence in the mining industry, confidence which is lacking among investors at the present time. While it may not be possible to eliminate the speculative element from the mining business, it should be the function of this public technical expert to reduce this element to a minimum. His work would not, it is believed, in any way interfere with the practice of private mining engineers. In fact, by constantly calling attention to the practical value of technical assistance, his activities ought actually to increase the professional opportunities of private practitioners. That the service that such an expert should render is needed is indicated by the correspondence records of the director of the Mackay school of mines, who during a single

year responded to 91 requests for specific information regarding the mining resources of the State. This service would be, indeed, but an extension of the work of the State mining laboratory, which was established at the university in 1895, and which provides for the ordinary analyses of ores free of charge for prospectors.¹

The Mackay school of mines should maintain a keen interest in research. In fact, the committee recommends that definite provisions for graduate work in mining be made within a few years. The committee has already implied that it does not advise the general development of graduate work at the University of Nevada. Graduate instruction is exceedingly expensive. Only a very small percentage of the population can avail themselves of it. There are already several excellent graduate schools in the far West, which should be able to supply the needs of this section for some time to come. The committee is led to recommend the development of graduate courses in the Mackay school of mines, however, on three grounds: (1) Because of the close proximity of so many rich mines; (2) because the Mackay school is sufficiently endowed to warrant the State in contributing such funds as may be necessary to furnish advanced instruction of the highest grade; and (3) because of the stimulating effect which graduate work, even if carried on in only one department, has upon the scholarly interests and standards of the whole institution.

Of special importance is the relationship of the Mackay school of mines to the large interests which it serves. The committee suggests three methods of fostering this relationship: (1) There should be an advisory board of five or more mining men, appointed by the regents upon the recommendation of the director and with the approval of the president.² This board should have as its object the correlation of the instruction offered by the school with practical mining work. It should meet with the director once a year to consider changes and improvements in the courses in mining, and should at all times be alert to assist him in advancing the institution of which he is in charge. (2) Provision should be made for bringing to the university each year several lecturers on various practical phases of mining problems. (3) Some of the work in mining experimentation, which is being carried on in connection with the operation of the large mining companies, should be made available to university instructors and students. The practical means for the accomplishment of this end might well be one of the problems for the mining advisory board to consider.

¹ Compare, p. 67.

² The committee has already commented on the honorary board of visitors at present maintained, and has suggested that it be replaced by special boards for each of the separate divisions of the institution (see p. 90).

In Chapter VI the committee suggested certain changes in the organization of the school. It now submits two alternative proposals looking toward the enhancement of the school's efficiency and standing.

1. The Mackay school of mines might be given a definite and separate position in the university organization, the director becoming the real as well as the nominal head of the school. He should in that case be made a member of the council of administration and should be required to deal directly with the president of the university. Whether he received the title of dean or not is a matter of minor importance and one to be determined by expediency when the occasion arises. It has already been recommended that the school have a somewhat larger teaching and service staff assigned to it. But even if additions to the instructing body are not made, the director and his staff should have, in the event of the adoption of this proposal, administrative as well as educational control of the students in mining. The relation of the mining school to the college of engineering would then be through joint faculty meetings for the discussion of problems common to both school and college.

2. The Mackay school of mines might be given a more dominant place in the organization of the college of engineering, the other departments of the college being made subordinate and contributory to it. The college of engineering would then become in effect a school of mines and engineering, a type of organization which has been adopted in at least one other mining State. The paramount importance of the mining industry in Nevada would thus be recognized.

The committee is aware that either proposal would at the outset meet opposition. The principal objection to the first alternative—the plan which the committee on the whole prefers—is that if carried out at present it would create two very small administrative subdivisions of the university in the place of a single unit of respectable size. The trend of enrollments in both mines and engineering indicates, however, that this objection would apply only temporarily. Against the other alternative it may be urged that the college of engineering (excluding the school of mines) has proved itself one of the most progressive and vital divisions of the university and that an attempt to subordinate its work to that of any other technical interest would tend to diminish the enthusiasm of both students and teachers to the detriment of university spirit and the State's service. The committee concedes this and on that account favors the first plan. A readjustment substantially in line with one or the other of these proposals must inevitably be made if the mining school is to perform its proper function in relation to the State's principal industry and if it is to realize its almost unparalleled opportunity.

MINING SCHOOLS OF SECONDARY GRADE.

The determination of the people that the State's oldest and richest industry shall not lack educational support is shown by the readiness of the last legislature to undertake provision for elementary mining instruction at the more important mining camps. The Tonopah school and the school at Virginia City are testimony of the belief of the people in industrial education. The committee does not wish to dampen the enthusiasm of the supporters and champions of such schools, the establishment of which it heartily indorses; nevertheless it ventures to call attention to certain dangers which must be guarded against if these institutions are to render efficient and economical service.

The first danger is that such a school may lose its reason for existence by the failure of the camp in which it is located. It would be uneconomical to continue instruction of this character without a certain minimum number of students. The committee believes that, in view of the sudden fluctuations in population to which mining communities are subject, it would be good policy for the State to encourage joint support by State and local contribution of these industrial courses. Under this arrangement the local school authorities might, for instance, furnish the quarters needed and pay one-half of the salary of the special teacher of mining subjects, the State defraying the other half. Whenever the number of pupils fell off to the point where the local community judged that the school was no longer justified, the enterprise might be abandoned.

The second danger is that the work of such a school may lose its true vocational character unless it has the proper direction. If, for example, the attempt were made to introduce work of this nature into a public school system whose officers were unfriendly to its purposes, this danger might well exist. It may be guarded against by continuing to rely upon the director of the school of mines for assistance in the selection of a proper teacher and for advice and direction as to the course of study. The local school authorities, however, should be encouraged to handle this problem as soon as they are able to do so.

**THE SCHOOL OF ELECTRICAL AND MECHANICAL ENGINEERING AND
THE SCHOOL OF CIVIL ENGINEERING.**

The two departments designated, respectively, the school of electrical and mechanical engineering and the school of civil engineering, comprise, together with the Mackay school of mines, the college of engineering as at present organized. The committee has already expressed its opinion that the Mackay school of mines should be detached from the college of engineering and given coordinate adminis-

trative rank with it. The schools of civil and electrical and mechanical engineering would then constitute the college of engineering.¹

These two departments have been supported generously for a number of years. They occupy two buildings, well designed and amply supplied with shops, laboratories, and recitation rooms. The electrical building was built in 1911-12. Since that time the enrollment in the mechanical and electrical engineering curricula has been increasing rapidly. There has not been a corresponding increase in the number of students in the civil engineering department.²

An inspection of the attendance records shows a rather large number of special students in the mechanical and electrical engineering courses who are taken into the university from practical lines of work, in order that they may be given a certain amount of technical assistance. In 1914-15 there were 25 such students. In 1915-16 the number was 24, more than one-third of the total number enrolled in the school of electrical and mechanical engineering. Most of these appear not to have been special students in the sense that they were exceptional. They were largely men who had not completed the high-school course required for regular admission, but who were attempting to get as much as possible from the college subjects for which they were prepared. The presence of this large group of students suggests to the committee the possibility of a real demand for a practical mechanic arts course not leading to a degree. Persons wishing to enroll for such a course might be required to furnish evidence of practical experience in lieu of the usual academic requirements. Such courses are now conducted by several land-grant colleges.

The equipment in the forge, foundry, machine, and wood shops is sufficient and is well adapted to the practical shopwork instruction usually required in engineering schools. The work is so arranged as to approximate actual working conditions. The wisdom with which the fundamental courses have been planned and the care exercised in their oversight deserve commendation.

The committee doubts whether a small university with limited support should attempt to develop equally several different lines of technical instruction. The forms of technical training which can be utilized in the leading industries of the State should, of course, have first consideration. As has already been suggested, other technological curricula may to a certain extent be made contributory to these. Mining and agriculture are preeminent among the industries of Nevada. The recommendation has already been made that graduate work in mining be undertaken when the resources of the university permit. The committee is not of the opinion that grad-

¹ For comment on the use of the term "school" to designate such administrative divisions, see p. 89.

² For tabular and graphical representations of the enrollments, see pp. 119, 120, and 121.

uate instruction in agriculture will be justified in the near future, nor does it believe that the college of engineering should develop graduate courses. On the other hand, the possible further development of such cooperative contacts between the college of engineering and the mining and agricultural interests of the State as are represented by the work in engineering experimentation, mentioned in Chapter IV, appears to the committee to be worthy of study.

In general, the committee was much impressed with the equipment and atmosphere of the college of engineering and with the excellence of its work.

THE COLLEGE OF AGRICULTURE.

It has been pointed out that agriculture is one of the two major industries in Nevada, and that upon its extended development more than upon any other factor now foreseen the growth and permanent welfare of the State depend. Modern agriculture is both an industry and a science. To fulfill its function as the one organized training agency in agriculture, the university must not only seek to increase scientific knowledge in this field and give advanced scientific training to those who can avail themselves of it, but it must by extension courses, demonstrations, and short courses reach the much greater number of farmers who through lack of time or preliminary education are unable to pursue the regular courses in the college of agriculture. In Chapter IV the committee has briefly outlined and commended the work of the university in agricultural experimentation and extension, and has offered general suggestions as to its further development. Certain facts relating to the residence work of the college of agriculture are now submitted, with comment thereon.

The college of agriculture includes the school of agriculture and the school of home economics. The school of agriculture has had an astounding growth. In seven years its enrollment has increased from 1 to 64 students. The school of home economics enrolled seven in degree courses during the last academic year. It had 10 special students. In the same year both schools organized short courses open to young men and women who could not undertake full college work. These courses are given for 10 weeks in the winter. Each course is arranged to cover two winter periods. In 1915-16, the year of their establishment, these courses enrolled only eight students. Without doubt, however, a gradual increase in attendance may be expected as soon as the young people of the State realize the existence of these opportunities and their value. The Bureau of Education has repeatedly urged the extension in all colleges of agriculture of short courses practical in character, requiring little formal academic preparation, and given at a time when farmers are most likely to be free to attend. This service is an essential part of the function of an agricultural college.

The development of curricula in the school of agriculture has followed closely the agricultural needs of the State. The school now offers three courses leading to the degree of B. S. in agriculture, one in horticulture, one in dairying, and one in agricultural engineering. It plans, when its resources permit, to offer a fourth course in poultry husbandry, an industry fitted to local conditions. The school of home economics announced four groups of courses leading to the degree of B. S. in home economics, a household science group, a household arts group, an extension worker group, and a household administration group. This announcement appears, however, to represent rather the ultimate aim of the department than its current offerings. There was but one upper-class student in the last academic year, and there have been as yet no graduates from this school.

This thriving and important department of the university is more than any other (except possibly education) handicapped for lack of teaching and experimental space and equipment. It is housed in a small building erected for the dairy department, and containing only a single lecture room, and in portions of the already crowded basements of two other buildings. Even that indispensable instrument of a college of agriculture, a farm of such size and character that the typical agricultural operations of the section which the college serves can be carried on, has been secured only within the last two years, and then on tentative terms, largely through the generosity of private citizens. The committee recommends in passing that the legislature take the action needed to put the university in permanent possession of this property, which is essential to its work and of which it has already made such excellent use.

The imperative and now foremost need of the college of agriculture is a building large enough to contain the present departments and their equipment and to allow for a reasonable growth in students and in teaching materials. The committee is prepared to endorse the specific requests made by the dean of agriculture to the honorary board of visitors. He points out the immediate present need of a farm crops laboratory, a soils laboratory,¹ a farm machinery laboratory, an agricultural lecture room, and laboratories and lecture room for home economics. The committee recommends that an appropriation be made for the erection of a building (including this equipment) which shall be devoted primarily to the purposes of agriculture.

THE NEVADA STATE NORMAL SCHOOL AND THE DEPARTMENT OF EDUCATION.

The work of training teachers for elementary schools is performed by the Nevada State Normal School, which is under legal enactment established at the university and administered as one of its organic

¹ In view of the large number of samples of soil submitted to the university for analyses, it may also be necessary to employ another instructor in this department.

divisions. The committee was surprised to find that the Nevada State Normal School is now wholly merged in the college of arts and sciences. The routine administration of the school is handled by the dean of arts and sciences. Students entering it are registered as freshmen and included in the lists of freshmen in arts and sciences. In fact, there is no way of telling from the university's published records how many students are registered in the normal school, or even how many persons are expected to present themselves for teachers' certificates in any given year. The dean in education keeps a record of all persons taking courses in education, both the candidates for normal school diplomas and the candidates for the bachelor's degree in education. He also advises these students with regard to their programs. In respect to attendance and discipline the matriculants of the normal school and those specializing in the department of education are under the control of the dean of arts and sciences and the dean of women. The Nevada State Normal School has been for something over two years merely a paper institution.

Whether or not this is a wise policy may appear from the following facts. There were 576 elementary and high-school teachers in Nevada in 1914-15, of whom 476 were in the elementary schools. Short tenures are common for both classes. No comprehensive statistics appear to be available, yet the estimate of both the State department of education and the State high-school inspector is that about one-half were just beginning their teaching experience in the State. The extent of the annual importation of teachers is indicated in the summary below.

Certificates issued by the State superintendent of public instruction upon credentials from outside Nevada were as follows:

	Elemen- tary.	High school.
1914-15.....	87	46
1915-16.....	98	50

During 1915-16 there were 101 temporary and special certificates issued.

The university graduated 15 persons with the normal-school diploma for elementary grades, and 14 persons with the diploma for high-school grades in 1915.¹ From 1889 to 1915 the number of graduates of baccalaureate or normal-school courses following the teaching profession was 108. Of these, 60 held normal-school diplomas and 30 the degree of A. B. in education; 18 had no professional training.² The dean in education estimates, however,

¹ A report from the State superintendent of public instruction, however, shows that certificates were issued in 1915-16 on credentials of the University of Nevada as follows: High-school grade, 15; first grade, 11; second grade, 12.

² Of the 108, 94 have taught, or are teaching, in Nevada.

on the basis of the present enrollment that the normal courses and the degree courses at the university may be counted on to supply about 45 teachers annually. About one-third of these will have taken the one-year course for a second-grade certificate; another third will have completed the two-year normal-school course. About 15 will be degree holders in education, qualified for high-school positions. In addition to these 45, the county normal schools, if continued as at present, will probably furnish another 15.¹ If this estimate is correct (and as far as the university is concerned it exceeds somewhat the actual output of preceding years), Nevada's teacher-training agencies will supply 60 out of a total of upward of 200 new teachers needed every year. At present only 13.3 per cent of the high-school teachers and less than 50 per cent of the elementary teachers² were trained at the university.

The committee regards the conditions revealed by these figures as singularly unfortunate. Nevada, like other far Western States, has proved alluring to vigorous, adventurous spirits in all occupations. The State has no doubt benefited in certain directions by the presence of teachers from the East and from other sections; but the conditions of rural living in Nevada are so unlike those of most other States, the problems to be faced by rural school-teachers are so peculiar, that the newcomer is much less effective in meeting them than the native son or daughter. The development of really vital schools in Nevada, especially in rural communities, will depend in large measure on the leadership furnished by the young people of the State. For this reason it is imperative that the State should take immediate steps to supply from its own training agencies the greater part of the teachers that it needs.

The committee believes that the State can best train its elementary teachers in an institution organized primarily for the purpose, polarized with reference to the problems of elementary teaching in the State, with courses of study planned specifically to meet the local exigencies; an institution which the public can see and in which students can take pride as a separate entity. The committee therefore recommends that the Nevada State Normal School be reconstituted and given a measure of administrative independence.

The task of training high-school teachers presents an equal obligation. Indeed, high-school teachers have been grouped with the elementary teachers in the foregoing discussion of State conditions. Prospective high-school teachers will naturally take most of their work in the college of arts and sciences. While it is not disposed to

¹ It should be noted, however, that in 1915-16 the superintendent of public instruction issued 38 second-grade certificates on credentials from county normal schools.

² Percentage estimated by the State high-school inspector.

recommend for the immediate future the transformation of the Nevada State Normal School into a college of education, the committee believes that the strictly professional work of prospective high-school teachers might, after the separate establishment of the normal school (as now) be under the direction of the dean of that school.

The county normal schools recently established can hardly be regarded as anything more than makeshift institutions. At best the work offered in them must be inferior to that given in a thoroughly organized normal school, particularly one connected with a State university. The committee is credibly informed also that the expense of maintaining them is relatively great. It undoubtedly would be just as economical for the State to pay the traveling expenses to Reno of those now in attendance at them. Even if no money were saved, the superiority of the training which such students would receive at the Nevada State Normal School would be worth enough more to justify this procedure. The committee recommends that the legislature consider the advisability of abolishing county normal schools and of paying railroad fares to within 100 miles of the Nevada State Normal School of all qualified candidates who live more than 100 miles distant from Reno.

In general terms the committee's conception of the reconstituted State normal school might be summarized as follows: The institution should have a separate staff and a separate budget. The divorce of its budget from the general budget of the university would serve to call particular attention to its needs and its services. It should have adequate facilities for practice teaching. The committee is not prepared to indorse unreservedly any one of the plans for practice teaching presented for its consideration. It is disposed to favor control by the State normal school of a sufficient number of conveniently located rural schools to insure practice teaching under rural conditions. If economical and satisfactory arrangements can not be made with city school authorities for practice teaching of elementary and high-school grade in Reno, the committee believes that the establishment of a model school in connection with the university in which both elementary and high-school work are given would be justifiable. The normal school should have a special department of rural education. Together with the department of education in the university, it should have a building devoted primarily to its use.

The committee has not been asked to consider the question of the certification of teachers. In fact, this question lies in the province of the survey commission, to which this committee makes its report. It ventures to point out, however, that the requirements for holding teaching positions imposed by the State finally determine the quality of the State teaching body. In this connection it calls attention to

the substance of certain recommendations made by the Bureau of Education in a recent survey of educational institutions of the State of Washington:

1. The State should require certain definite academic and professional attainments of all teachers.
2. The ultimate standard of attainment for all persons teaching in the State should be graduation from an accredited high school and at least two years of professional preparation.
3. The process of elimination should be gradual, to permit teachers in service to meet the new requirements without undue hardship.
4. The normal school should offer differentiated courses of study representing two and three years of work above high-school graduation.
5. After the expiration of a reasonable time limit, the lowest grade of certificate to be issued by the normal school should represent two years of study above high-school graduation. The normal school diploma should be given only to those who have finished satisfactorily a full course of three years.
6. A permanent license to teach in the public schools of the State should be granted only to persons who have pursued for a period of from two to five years cultural and professional courses of study prepared by State educational officials, and have passed satisfactory examinations on these courses.

THE SUMMER SESSION.

During the progress of the investigation it was suggested to the committee that the summer session possibly represented an unwise expense. In view of the economical plans upon which university summer sessions are usually operated, it did not seem possible that such a charge could have foundation. The university plant which would otherwise be idle, and the university and normal instructors who have free time are taken advantage of. University summer schools furnish instructional opportunities of a high order to teachers and certain others who are unable to attend during the regular session. They also enable regular students to make up deficiencies and so to continue their college work without undue loss of time.

Inasmuch as the expense of the summer session of 1916 does not come within the fiscal year 1915-16, which is dealt with earlier in this report, the facts are given here.

The enrollment of the summer school of 1916 comprised 14 men and 109 women, or a total of 123. Estimating each class as meeting on the average five hours a week, the total number of student clock hours for the summer session amounted to 10,950. The pay roll of the summer session, plus the compensation of the director (\$600), was \$2,503.33, representing a cost of 22.86 cents per clock hour. This does not include an overhead charge which for cost accounting purposes should be added. The average overhead per clock hour for the regular term was 17.79 cents. If this were added, the cost per clock hour of instruction would be 40.65 cents, which is still a reasonable clock hour figure as compared with the cost of the regular

work. Equipment cost, as distinguished from overhead, is practically negligible in the summer session. The decreased cost in supervision and in heating would probably offset such expense.

The committee believes there is a real need of a summer session. The work should be developed along the present lines to include especially the instruction which will be most inspiring and useful to the teachers of Nevada.

The following tables give the classes with the enrollment in each, and the summer session pay roll, to which has been added the proportion of the salary of the dean in education which the committee was told was chargeable to this service.

TABLE 29.—*Classes in summer school, 1916.*

Classes.	Men.	Women.	Total.
Physical education.....	0	20	20
Spanish 2.....	1	2	3
Spanish 1.....	2	21	23
History of education.....	0	7	7
School supervision.....	3	7	8
Manual arts.....	0	7	7
Art 5.....	0	3	3
Art 1.....	0	20	20
Nature study.....	0	5	5
Botany.....	2	3	5
Physiology and hygiene.....	4	6	10
English literature.....	0	6	6
Primary reading.....	0	18	18
Grammar.....	0	21	21
American history.....	1	10	11
Geography.....	0	17	17
Arithmetic.....	0	20	20
Advanced algebra.....	2	2	4
Physics.....	0	5	5
Plane geometry.....	3	5	8
Solid geometry.....	3	0	3
Manual training.....	3	7	10
Penmanship.....	0	11	11
Bookkeeping.....	0	12	12
Psychology.....	2	10	12
Principles of education.....	0	22	22
School management.....	2	10	12
Expression.....	1	8	9
Modern English literature.....	0	8	8
Composition and rhetoric.....	2	1	3
Music.....	0	11	11
Modern history.....	3	5	8
Civics.....	0	17	17
Ancient and medieval history.....	0	6	6
Total.....	34	331	365
Enrollment, excluding duplicates.....	14	109	123

TABLE 30.—*Summer school pay roll, 1916.*

Lecturer.....	\$100	Commercial.....	\$80
Physical education.....	100	Psychology.....	150
French-Spanish.....	125	English.....	133
Art.....	100	Music.....	100
Botany.....	125	History.....	150
English.....	200	Physical education (piano).....	25
Manzanita Hall.....	125		
History.....	200	Total.....	1,903
Mathematics.....	150	Director and education.....	600
Manual training.....	60	Grand total.....	2,503

SUMMARY OF RECOMMENDATIONS.

1. Increase of staff and equipment of the Mackay school of mines, especially the provision of an expert in small mining properties.

2. The gradual development, as resources permit, of graduate work by the Mackay school of mines.

3. Alternative proposals for increasing the influence and service of the Mackay school of mines, as follows:

(a) The elevation of the school of mines to coordinate rank with other administrative divisions of the university.

(b) The assignment to the school of mines of a dominant position in the college of engineering, other engineering departments being made contributory to it.

4. The erection of a building for the college of agriculture adequate to its present needs and large enough to allow for a reasonable growth in students and teaching materials.

5. The reconstitution of the Nevada State Normal School on an administrative basis coordinate with that of other organic divisions of the university.

6. The consideration by the legislature of the advisability of abolishing county normal schools and of paying railroad fares, to within 100 miles of the Nevada State Normal School, of all qualified candidates who live more than 100 miles distant from Reno.

7. The provision of a building for the Nevada State Normal School.

Chapter XI.

CONCLUSION AND GENERAL SUMMARY OF RECOMMENDATIONS.

By way of conclusion the committee sums up its findings as follows: It has found the university involved to some extent in politics, misunderstood by a portion of the people, suffering from the lack of a sentiment of unity both among the students and the members of the faculty. In comparison with higher educational institutions in other States and in comparison to the State's wealth, it is only fairly well supported. Its officers have evidently been eager for large numbers. As a result it is educating many outsiders and many special students. It grants the latter too great concessions, while enforcing orthodox requirements on regular students. It is well organized on the administrative side. For the most part it confines itself to work demanded by the social and industrial conditions of the State. It is already entering the broader field of general public service. Its faculty is of uneven scholarly preparation, but includes some teachers of training and distinction. It pays salaries for the most part not high enough to enable it to compete for instructors with other State universities, and it overloads with teaching hours a considerable proportion of its staff. Nevertheless, on account of its small numbers, it exhibits higher unit costs and higher costs per student than most other State institutions which the Bureau of Education has studied. It is in the act of installing an admirable system of accounts. Already it has a complete and well-kept system of educational records. It is badly handicapped for lack of buildings and equipment, especially for its work in agriculture, in education, and arts and sciences.

In spite of these hindrances it displays an impressive vitality. The committee judges that it is actually close to the hearts of the people and an object of pride with them. Their very proneness to chasten it evidences their affection. It supplies the needs of a body of young people who are the product of an environment peculiarly adapted to develop a strong and virile race. It possesses, indeed, in the vigor and enthusiasm of its students an asset which few institutions have. It is energized, moreover, by the electric current that is in the air of a young, growing, rich, and confident community. It has prospects for high service and sound reputation unsurpassed by those of any of the smaller State institutions.

The committee believes that its most urgent needs are: (1) That it clear itself through a change of the system of control from entangling political alliances; (2) that it interpret itself to the people and thereby regain their confidence; (3) that it secure support to enable it to pay higher salaries and to build; (4) that it reduce the number of special students and of nonresidents; and (5) that the various groups of its constituents come together in a common loyalty.

If the committee were to formulate its ideal for a university in a State of the character of Nevada, it would be in terms somewhat as follows: In view of a small population and insistent local needs, the institution would devote itself solely to the education and service of the citizens of its own State. It would consist of but few colleges and departments. Exclusive of a college of arts and sciences designed to give facilities for liberal culture and pure scholarship to those who can take advantage of them (and the number should increase as fast as possible), it would offer technical and professional courses only in lines contributory to the major vocations of the State. It would recognize a special obligation to provide enough trained teachers to insure to the State an evenly served and effective public school system. With respect to the number of students in residence, it would be a small institution. It would, indeed, regard its small size as a peculiar privilege, enabling it to give to those who frequent it a more intimate oversight, a more intensive training than are commonly afforded in very large institutions. It would seek a national reputation for the highest excellence in those few departments which the special needs of its constituency have called into being. It would press for means to secure men and equipment to win such a reputation. It would convince the State of the essential soundness of this program, of the bigness of the opportunity thus presented. It would reinforce its appeal by making itself the State's center of inquiry and distribution for all forms of knowledge bearing on the health, the material interests, the intellectual and social welfare of the citizens.

The foundations for such an institution in Nevada are already laid. Compared with those of many other States, the problems involved in the development of higher education here are singularly simple of solution. This ideal, if it should commend itself to the people of the State, the University of Nevada can easily and presently attain.

GENERAL SUMMARY OF RECOMMENDATIONS.

1. The change of the system governing the selection of the board of regents and the creation of a board of seven members, to be appointed by the governor and confirmed by the senate, for terms of eight years.

2. In case the system is changed as indicated, the abolition of the prescription requiring the person appointed as president of the Uni-

versity of Nevada to be indorsed by the president and faculty of the three collegiate institutions.

3. The rejection of proposals to separate the college of agriculture (and possibly other departments) from the university and to maintain it at another place.

4. The inadvisability of attempting to increase largely the university enrollment.

5. Restriction of the scope of the university for the present to the liberal and technical divisions already established.

6. The careful scrutiny of the qualifications of candidates for admission to special standing.

7. The large reduction of the number of special students.

8. The raising of the minimum standard for continuance on the rolls of the university.

9. The requirement of previous collegiate teaching experience or advanced graduate work as a condition to appointment on the university staff.

10. The requirement of an advanced degree, scholarly publication, or exceptionally successful teaching as a condition to promotion.

11. The serious consideration by the administrative officers of the large number of small classes.

12. An increase in salaries and the establishment of \$3,000 as the maximum salary of full professors.

13. Increase of staff and equipment of the Mackay school of mines, especially the provision of an expert in small mining properties.

14. The gradual development, as resources permit, of graduate work by the Mackay school of mines.

15. Alternative proposals for increasing the influence and service of the Mackay school of mines, as follows:

(a) The elevation of the school of mines to coordinate rank with other administrative divisions of the university.

(b) The assignment to the school of mines of a dominant position in the college of engineering, other engineering departments being made contributory to it.

16. The erection of a building for the college of agriculture adequate to its present needs and large enough to allow for a reasonable growth in students and teaching materials.

17. The reconstitution of the Nevada State Normal School on an administrative basis coordinate with that of other organic divisions of the university.

18. The consideration by the legislature of the advisability of abolishing county normal schools and of paying railroad fares to within 100 miles of the Nevada State Normal School of all qualified candidates who live more than 100 miles distant from Reno.

19. The provision of a building for the Nevada State Normal School.

APPENDIX.

A. QUESTIONS ASKED THE BOARD OF REGENTS BY THE COMMITTEE AT THE CONFERENCE OF SEPTEMBER 29.

1. What has been the practice and what is the opinion of the board with reference to the proper division of power and initiative between the board on one side and the faculty and president on the other—

(a) On educational matters?

(b) On financial matters?

2. What is the policy of the regents with reference to the furnishing of information to the public from records by officers of the university?

QUERY: Why did you reply as you did to the request of Mr. Kilborn?

3. Do the regents desire that the standards of the University of Nevada shall be equal to those of other first-class State universities?

4. Have the provisions of the law with reference to the appointment of the president been complied with?

5. What is the policy of the regents with reference to the participation of officers of the university in public questions, such as the café, gambling, or divorce question?

B. INQUIRY BY THE NEVADA STATE JOURNAL CONCERNING UNI- VERSITY FINANCES AND THE BOARD'S REJOINER.

(See Chapter II.)

RENO, NEV., February 26, 1916.

The BOARD OF REGENTS,

University of Nevada.

GENTLEMEN: The Journal is desirous of obtaining information on a number of matters affecting the University of Nevada and respectfully requests the Board of Regents to supply data on the following subjects:

Equal salaries of former President Stubbs and President A. W. Hendrick.

The expense of the university banquet for the last legislature.

The expense account of President Hendrick for entertaining during 1914-15.

The amount paid for rental for president's residence in 1914-15.

The cost of reconstruction, repairs, and refurnishing the president's home on the campus.

Initial cost and upkeep of Ford and Dodge automobiles in 1915.

Month by month, what salary did Prof. Ordahl receive after June, 1914, and when did his salary cease? Please give each month's payment for salary separate.

The salary list for the university for June, 1914, and for some recent month, preferably toward the close of 1915, or for January, 1916.

The list of professors and teachers and the amount of their individual salaries in 1914; also for 1915 and at the beginning of 1916.

How much money does the university receive from the Federal Government annually? Do the receipts and expenditures appear in the report of the general receipts and expenditures of the university, or are they kept in a separate account?

Please name the professors and the teachers who are paid from other than State funds and the amount of their salaries.

What were the total expenses of university administration in 1914?

What were the total expenses of university administration in 1915?

What was the student enrollment at the beginning of February, 1914? Of February, 1915? Of February, 1916?

Please give us the total traveling expenses—railroad transportation, Pullman car, dining car, hotel bills, automobile service, and other traveling expenses of President Hendrick, of Dr. James, and of all others connected with the university whose traveling expenses have been paid or are to be paid out of the funds of the university—State, Federal, or special funds—since President Hendrick became president.

Please give us the number of days President Hendrick has been absent from the University of Nevada since he became president of it, together with the cost of his absence. Is the nature of the business sufficiently important to justify the expense attached to the trips frequently made outside of the State?

Please give us the number of days Dr. James has been absent since he became a member of the university faculty. Is the nature of the business sufficiently important to justify the expense attached to the trips frequently made outside of the State?

Please give us the total salary paid to Vice President Lewers and to Dr. James.

Are all the expenses of the university accounts itemized? If so, from whom can they be obtained?

By giving the above information you, as regents of the university, will greatly oblige us.

Yours truly,

NEVADA STATE JOURNAL,
George B. Kilborn.

UNIVERSITY OF NEVADA, OFFICE OF BOARD OF REGENTS,
Reno, Nev., April 12, 1916.

NEVADA STATE JOURNAL,
Reno, Nev.

GENTLEMEN: As you are probably aware, there has been no meeting of the Board of Regents since the date of your esteemed favor of February 25, 1916, so that the same could not be considered until the meeting held upon this date.

Your letter has been given careful consideration by the board, and it is the opinion of the board that no particular purpose could be served by answering the same in detail, in so far as it refers to financial matters.

Every cent expended by this board must be accounted for by a voucher from the claimant, then passed by us, and finally approved by the State board of examiners, after which the same is filed in the office of the State comptroller, where it is subject to the scrutiny and criticism of any citizen. As you have at your disposal the resources of a daily newspaper, you can without doubt secure all of the information you desire at the place herein indicated and without any particular expense or inconvenience to you.

Relative to your inquiry as to the number of days that the president of the university or other heads of departments have been absent from the campus, we must say that we do not feel impelled to answer the same categorically. We will say however, that all such absences have been with the knowledge and approval of this board, and that such absences have been upon business of the university, in its interests and in the furtherance of its work.

It must not be forgotten that all of the work of the university can not be transacted upon the campus; but that many of its most important interests must receive attention at various places within the State, at Washington, and other points outside of the State. It has never been contemplated that the activities of the president of a college should be entirely confined to the daily detail and routine work of the campus. There are

separate heads of departments, professors, and instructors who give their entire time and attention to such matters. Again, it is not always wise to give publicity to formative plans of administration. But it is most certainly true that at the proper time and before the State is committed to any policy a record of the same must be made, which is always available to public inspection.

We believe that the history of the university in the past fully justifies that course of action, and we feel as confident for the future.

As a matter of principle, we do not believe that we should answer your inquiries other than as we have here so done. The law provides the manner and the kind of reports this board must make; when and to whom. These reports have always been made and they will be made hereafter. Were we to attempt to answer officially all such inquiries as yours which might be addressed to us by any taxpayer and citizen, no matter how praiseworthy the motive might be which inspired them, we would be assuming a burden never intended.

Our office imposes upon us certain grave responsibilities. We take it that our election to it vested in us certain confidences of the people of this State. In the exercise of our official duties we have always been conscious and mindful of the responsibility. We trust that in the last analysis the confidence will not be found to have been misplaced.

Very respectfully yours,

CHARLES B. HENDERSON,
Chairman Board of Regents.

By order of Board of Regents.

REPLIES TO QUESTIONS RAISED BY NEVADA STATE JOURNAL.

Prepared by order of board of regents but not sent.

1. President Stubbs received \$5,900 per year.
President Hendrick receives \$6,000 per year.
2. University banquet to the legislature given at the university dining hall cost \$235.30.
3. President Hendrick has done no entertaining at university expense.
4. The rental on the president's residence was \$37.50 per month from September, 1914, to and including August, 1915.
5. Reconstruction and repairs and refurnishing president's residence was as follows:

Plumbing.....	\$303.35
Furniture and fixtures.....	1,930.46
Plastering.....	195.00
Wiring.....	167.28
Painting and papering.....	352.50
General repairs.....	554.35
Total.....	3,502.92
6. Initial cost of Ford and Dodge automobiles and upkeep to Apr. 1, 1916, as follows:

For purchased Apr. 6, 1915, original cost.....	\$582.50
Gas, oil, etc., to Oct. 3, 1915.....	77.65
	\$660.15
Rebate from Ford Company.....	50.00
Oct. 3, 1915, sale price.....	461.00
	511.00
Net cost.....	149.15
Dodge, Oct. 1915, cost.....	750.00
Gas, etc., to Apr. 1, 1916.....	106.37
	856.37

7. Dr. George Ordahl received \$200 per month from July, 1914, to October, 1914, inclusive, and \$100 per month for November and December, 1914.

Dr. Ordahl was granted leave of absence on half time from October, 1914. He was paid \$700 on the January pay roll as the amount due him on his contract to July 21, 1914, at \$100 per month. When Dr. Ordahl received this money he advised that under his agreement with the university he was to have pay until September 1, and, upon investigation, this being found to be correct, the remaining \$100 was paid him. Dr. Ordahl, for the year in question, received \$1,400. His regular salary was \$2,400 per year.

8. Salary list of the university for June, 1914, July, 1914, June, 1915, and February, 1916, inclosed herewith. The July, 1914, pay roll is inclosed to show the salary increase over the June, 1914, pay roll before the appointment of A. W. Hendrick as president.

9. The salary lists inclosed herewith give this information.

- 10(a). The university receives from the Federal Government the following sums annually:

Agricultural and mechanical fund.....	\$50, 000
Hatch fund.....	15, 000
Adams fund.....	15, 000
Smith-Lever fund.....	10, 000
Additional sum apportionate to population, which for the year ending June 30, 1916, was.....	834

Total..... 90, 834

- 10(b). All Federal funds are accounted for separately, as each fund has its special rules and regulations as to purposes for which expenditures may be made. They are also included in the general expenditure of the university.

11. Administration expense, 1914 and 1915:

	Year 1914.	Year 1915.
J. E. Stubbs, president.....	\$3, 708. 32	
A. W. Hendrick.....	1, 873. 30	\$6, 000. 00
Vice president.....	1, 150. 00	600. 00
Secretary, regents.....	300. 00	300. 00
Registrar.....	1, 200. 00	1, 200. 00
Business office.....	2, 482. 50	2, 484. 30
Stenographers.....	1, 307. 00	1, 353. 33
Deans.....	300. 00	1, 350. 00
	12, 225. 72	14, 247. 63

Students.

Enrollment for the year 1913-14.....	307
Enrollment for the year 1914-15.....	356
Enrollment for the year 1915-16.....	441

Traveling expenses—Engineering experiment station.

	Railroad.	Pullman.	Hotel.
J. G. Scrugham.....	\$44. 20	\$68. 25	\$198. 45
C. P. Campbell.....	11. 60		52. 24
H. P. Boardman.....	37. 60	1. 60	50. 00
R. A. Allen.....	16. 75	. 90	10. 20
R. H. Sheehy.....	14. 45		. 75
Total (\$506.99).....	124. 60	70. 75	311. 64

Traveling expenses—Food and drug control.

	Railroad.	Pullman.	Hotel, etc.
S. C. Dingsmore.....	\$85. 10	\$21. 40	\$115. 65
H. P. Bulmer.....	35. 10		83. 10
Total.....	120. 20	21. 40	198. 75

General traveling expenses.

	Railroad.	Pullman.	Meals and hotel.
F. Lincoln.....	\$1. 50	\$3. 60	\$34. 20
M. Adams.....	2. 95		
P. Frandsen.....	27. 40	4. 00	25. 75
P. A. I. schenbauer.....	15. 70	1. 50	8. 80
Laura De Laguna.....	13. 50	1. 50	. 41
Kate Bardenwerper.....	13. 50	1. 50	
Charles Haseman.....	13. 40	2. 50	
Geo. F. James.....	99. 32	17. 75	140. 94
Elsie Sameth.....		12. 80	1. 40
J. G. Scrugham.....	13. 40	20. 80	27. 05
R. C. Thompson.....	72. 60	6. 30	67. 95
L. F. Brown.....	1. 00		2. 40

Traveling expenses, President Hendrick, on file April 28, 1916.

Local (State and California):			
1914. Transportation.....		\$131. 60	
Meals.....		67. 15	
1915 and 1916. Hotel.....		61. 40	
Telegraph and telephone.....		5. 88	
			\$266. 03
Eastern, Nov. 1-17, 1914:			
Transportation.....		123. 70	
Hotel.....		85. 78	
Meals.....		78. 05	
Telegraph and telephone.....		35. 39	
Stenographer.....		18. 00	
			339. 92
Eastern, June 7-July 11, 1915:			
Transportation.....		177. 59	
Meals.....		128. 35	
Hotel.....		113. 36	
Telegraph and telephone.....		45. 08	
Stenographer.....		22. 35	
Incidental.....		2. 90	
			489. 63
Eastern, Feb. 23-Mar. 30, 1916:			
Transportation.....		156. 66	
Meals.....		90. 60	
Hotel.....		85. 38	
Telephone and telegraph.....		25. 79	
			358. 43
Total.....			1,454. 61
All trips:			
Total transportation.....		\$530. 55	
Meals.....		364. 75	
Hotel.....		344. 92	
Telegraph and telephone.....		112. 14	
Stenographer and incidental.....		43. 25	
Total.....			1,454. 61

The total salary of Vice President Lewers is \$3,000 per annum.

The total salary of Dean G. F. James is \$3,000 per annum and \$600 for summer school.

The expenses of the university accounts are itemized.

C. COMPARATIVE TABLES.

(See Chapter III.)

(a) *Percentage of change in population, school population, and secondary enrollment in certain States from 1895 to 1914.*

[Figures in italics indicate percentage of loss; other figures, percentage of gain.]

Years.	Iowa.			Georgia.			North Carolina.			Tennessee.			Illinois.		
	Population.	School population.	Secondary enrollment.	Population.	School population.	Secondary enrollment.	Population.	School population.	Secondary enrollment.	Population.	School population.	Secondary enrollment.	Population.	School population.	Secondary enrollment.
1895-1900	8.1	6.4	34.7	13.4	13.4	7.8	10.2	10.2	12.0	8.8	10.7	8.5	9.9	9.9	31.3
1900-1905	7.2	2.8	11.1	8.6	2.0	9.3	7.5	1.0	5.6	6.3	1.7	15.9	10.3	2.3	19.5
1905-1910	7.0	7.0	17.0	8.5	3.4	35.2	9.9	2.1	54.6	1.5	1.5	51.9	6.0	2.9	32.7
1910-1914 .....	.1	7.9	12.3	6.4	6.8	29.3	9.0	10.4	35.7	9.2	2.5	22.1	6.2	4.5	17.6

Years.	Minnesota.			Michigan.			Washington.			California.			Utah.		
	Population.	School population.	Secondary enrollment.	Population.	School population.	Secondary enrollment.	Population.	School population.	Secondary enrollment.	Population.	School population.	Secondary enrollment.	Population.	School population.	Secondary enrollment.
1895-1900	7.7	7.7	33.9	6.4	7.4	27.3	9.1	0.8	65.1	6.8	8.9	32.4	4.5	4.5	33.3
1900-1905	12.6	14.3	41.3	7.3	4.5	16.1	15.5	36.3	97.4	9.2	5.1	65.8	11.9	12.4	32.4
1905-1910	5.3	5.3	45.0	9.9	9.7	20.1	90.3	70.5	111.7	44.7	45.9	46.0	20.5	20.6	30.9
1910-1914	6.7	1.8	32.2	5.9	3.5	25.5	23.3	19.5	36.0	16.0	.73	47.4	11.0	1.1	34.7

Years.	Massachusetts.			New York.			Ohio.			Connecticut.			Pennsylvania.		
	Population.	School population.	Secondary enrollment.	Population.	School population.	Secondary enrollment.	Population.	School population.	Secondary enrollment.	Population.	School population.	Secondary enrollment.	Population.	School population.	Secondary enrollment.
1895-1900	13.4	13.4	26.7	13.7	13.8	62.4	9.8	9.8	33.5	13.3	13.6	26.2	8.2	8.2	33.4
1900-1905	10.2	7.0	24.9	8.7	5.8	21.7	5.8	1.5	16.9	8.9	6.1	14.7	8.3	3.0	26.2
1905-1910	9.0	6.0	18.3	15.3	9.4	30.4	8.3	7.6	6.6	12.7	12.5	31.8	11.0	4.5	31.2
1910-1914	7.1	10.6	24.1	8.6	8.9	24.2	5.5	10.5	16.1	7.9	2.1	38.4	7.6	8.6	32.8

TABLES BEARING ON SUPPORT OF PUBLIC EDUCATION.

(b) *Value of property, by States, for each child 5 to 18 years of age (1913).*

1. Nevada.....	\$38,400
2. California.....	15,500
3. Iowa.....	12,700
4. Montana.....	12,300
5. Colorado.....	11,100
6. Oregon.....	11,100
7. North Dakota.....	10,900
8. Nebraska.....	10,700
9. Washington.....	10,400
10. Wyoming.....	10,200
11. Illinois.....	10,000
12. New York.....	9,900
13. Vermont.....	9,500
14. Kansas.....	9,400
15. Minnesota.....	8,900
16. Arizona.....	8,600
17. New Jersey.....	8,100
18. Connecticut.....	7,900
19. South Dakota.....	7,500
20. Massachusetts.....	7,300
21. Ohio.....	7,300
22. Oklahoma.....	7,300
23. Indiana.....	7,200
24. Michigan.....	7,100
25. Pennsylvania.....	6,900
26. Rhode Island.....	6,600
27. Wisconsin.....	6,400
28. New Hampshire.....	6,300
29. Missouri.....	6,300
30. Utah.....	6,300
31. Idaho.....	5,900
32. Maine.....	5,900
33. West Virginia.....	5,800
34. Delaware.....	5,700
35. Maryland.....	5,700
36. Texas.....	5,000
37. New Mexico.....	4,700
38. Florida.....	4,300
39. Louisiana.....	3,800
40. Arkansas.....	3,400
41. Virginia.....	3,400
42. Kentucky.....	3,100
43. Alabama.....	2,900
44. Tennessee.....	2,700
45. Georgia.....	2,600
46. South Carolina.....	2,500
47. North Carolina.....	2,200
48. Mississippi.....	2,100

(c) *Number of men 21 years of age and over, by States, for each 100 children 5 to 18 years of age (1910).*

1. Nevada.....	180
2. Wyoming.....	179
3. California.....	169
4. Montana.....	165
5. Washington.....	161
6. Oregon.....	148
7. Arizona.....	129
8. Colorado.....	125
9. New Hampshire.....	123
10. Maine.....	120
11. Vermont.....	119
12. New York.....	117
13. Massachusetts.....	116
14. Connecticut.....	115
15. Idaho.....	113
16. Ohio.....	113
17. Rhode Island.....	111
18. New Jersey.....	110
19. Michigan.....	109
20. Illinois.....	108
21. Delaware.....	107
22. Indiana.....	106
23. Pennsylvania.....	105
24. Minnesota.....	99
25. Iowa.....	98
26. Kansas.....	98
27. Missouri.....	98
28. South Dakota.....	96
29. Nebraska.....	95
30. Maryland.....	94
31. North Dakota.....	93
32. Wisconsin.....	93
33. New Mexico.....	88
34. Florida.....	87
35. Utah.....	85
36. West Virginia.....	84
37. Kentucky.....	79
38. Oklahoma.....	78
39. Tennessee.....	74
40. Virginia.....	74
41. Texas.....	72
42. Arkansas.....	70
43. Louisiana.....	70
44. Alabama.....	67
45. Georgia.....	66
46. Mississippi.....	65
47. North Carolina.....	63
48. South Carolina.....	58

(d) Amount expended for public schools (1912-13), by States, for each adult male (1910).

1. Utah.....	\$38. 67
2. North Dakota.....	33. 52
3. Idaho.....	32. 55
4. New Jersey.....	29. 36
5. Washington.....	28. 54
6. Montana.....	28. 50
7. California.....	27. 76
8. Nebraska.....	26. 07
9. Minnesota.....	24. 54
10. Colorado.....	24. 02
11. Iowa.....	23. 57
12. Oregon.....	23. 50
13. Arizona.....	23. 34
14. South Dakota.....	23. 28
15. Indiana.....	23. 15
16. Massachusetts.....	22. 96
17. Kansas.....	22. 23
18. New York.....	21. 87
19. Illinois.....	21. 82
20. Michigan.....	21. 56
21. Ohio.....	21. 11
22. Pennsylvania.....	20. 17
23. Connecticut.....	19. 66
24. Wisconsin.....	18. 56
25. Oklahoma.....	17. 99
26. Vermont.....	17. 10
27. Rhode Island.....	16. 95
28. Wyoming.....	16. 72
29. Missouri.....	15. 96
30. Nevada.....	15. 62
31. Maine.....	15. 27
32. West Virginia.....	14. 99
33. Texas.....	14. 44
34. Maryland.....	13. 55
35. New Hampshire.....	13. 55
36. Florida.....	12. 29
37. New Mexico.....	11. 79
38. Kentucky.....	11. 77
39. Louisiana.....	11. 76
40. Arkansas.....	10. 81
41. Tennessee.....	10. 61
42. Virginia.....	10. 47
43. Delaware.....	9. 85
44. Georgia.....	8. 70
45. North Carolina.....	8. 03
46. Alabama.....	7. 94
47. South Carolina.....	7. 68
48. Mississippi.....	6. 57

(e) Amount expended on public schools, by States, for each child 5 to 18 years of age (1913-14).

1. California.....	\$49. 58
2. Montana.....	41. 48
3. Nevada.....	40. 72
4. Washington.....	40. 57
5. Arizona.....	37. 15
6. Utah.....	34. 68
7. Oregon.....	34. 63
8. New Jersey.....	34. 47
9. North Dakota.....	34. 17
10. Idaho.....	33. 71
11. Wyoming.....	33. 13
12. Massachusetts.....	31. 68
13. Colorado.....	31. 02
14. Minnesota.....	30. 78
15. Nebraska.....	29. 86
16. Ohio.....	29. 60
17. Connecticut.....	29. 39
18. New York.....	29. 29
19. Indiana.....	28. 73
20. Iowa.....	28. 17
21. Illinois.....	26. 48
22. Kansas.....	25. 87
23. Michigan.....	25. 66
24. Pennsylvania.....	25. 57
25. South Dakota.....	24. 77
26. Maine.....	23. 68
27. Vermont.....	23. 36
28. New Hampshire.....	21. 59
29. Rhode Island.....	20. 97
30. Wisconsin.....	20. 59
31. Missouri.....	19. 88
32. Maryland.....	15. 70
33. West Virginia.....	14. 00
34. Oklahoma.....	12. 65
35. New Mexico.....	12. 02
36. Florida.....	11. 81
37. Delaware.....	11. 76
38. Texas.....	10. 86
39. Kentucky.....	9. 76
40. Louisiana.....	8. 69
41. Tennessee.....	8. 67
42. Virginia.....	8. 54
43. Arkansas.....	8. 24
44. North Carolina.....	6. 64
45. Alabama.....	6. 22
46. Georgia.....	6. 21
47. South Carolina.....	5. 60
48. Mississippi.....	4. 53

(f) Receipts of higher educational institutions, including normal schools, per capita of population (1913-14).

1. Delaware.....	\$5.65
2. Arizona.....	2.94
3. New Hampshire.....	2.62
4. Nevada.....	2.53
5. Massachusetts.....	2.51
6. Connecticut.....	2.43
7. Wisconsin.....	2.33
8. California.....	2.30
9. North Dakota.....	2.17
10. Minnesota.....	1.99
11. Oregon.....	1.83
12. New York.....	1.77
13. Illinois.....	1.768
14. Iowa.....	1.714
15. Washington.....	1.711
16. South Dakota.....	1.64
17. Nebraska.....	1.54
18. Maryland.....	1.46
19. Virginia.....	1.45
20. Montana.....	1.44
21. Colorado.....	1.43
22. Kansas.....	1.38
23. Utah.....	1.38
24. Vermont.....	1.35

(f) Receipts of higher educational institutions, including normal schools, per capita of population (1913-14)—Con.

25. Michigan.....	\$1.35
26. Wyoming.....	1.32
27. Idaho.....	1.279
28. Maine.....	1.277
29. South Carolina.....	1.04
30. Ohio.....	1.01
31. Pennsylvania.....	1.00
32. Rhode Island.....	.93
33. New Mexico.....	.92
34. Texas.....	.83
35. New Jersey.....	.81
36. Indiana.....	.77
37. North Carolina.....	.75
38. West Virginia.....	.71
39. Missouri.....	.70
40. Louisiana.....	.68
41. Tennessee.....	.67
42. Mississippi.....	.63
43. Florida.....	.60
44. Alabama.....	.57
45. Georgia.....	.54
46. Oklahoma.....	.51
47. Kentucky.....	.47
48. Arkansas.....	.33

(g) Vocations of graduates of classes, 1906-1916.

Vocations.	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	Total.
Education:												
Superintendents and principals.....	1	1				1	2					5
College instructors.....					1					1		2
Teachers.....	3	3	3	3	4	3	6	7	3	12	9	56
Music teacher.....	1											1
Students.....							1	1	2	3	1	8
Public service, medicine, journalism, etc.:												
Government ¹			1		1	2						4
State.....	1				1							2
City.....	2											2
In Army.....	1		1									2
Medicine.....			1									1
Journalism.....										1		1
Y. M. C. A. work.....									1			1
Y. W. C. A. work.....					1							1
Business:												
Merchant and store.....	1		1					1	1			4
Salesmen, electrical supplies.....			2									2
Funeral director.....				1								1
Architect.....			1									1
Land agent and salesman.....						1		1				2
Printing.....				1								1
Demonstrator, farm implements.....		1										1

¹ Director of extension division, University of Nevada.
U. S. Land Service, Manila.
U. S. Department of Agriculture.

(g) *Vocations of graduates of classes, 1906-1916—Continued.*

Vocations.	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	Total.
<i>Engineering,¹ chemists, insurance, etc.:</i>												
Engineering.....	3	2	2	2	4	3	3	3	2	6	6	36
Mining.....	1	4	1	1	4	3	5	2	2		2	25
Mine superintendent.....			1					1				2
Railroad work.....			1	1					1			3
Automobile.....					1			1				2
Chemists.....						1		1		1	1	4
Assayer (State laboratory).....							1					1
Insurance.....									1			1
Agronomist (experiment station).....									1			1
Clerk (Wells Fargo).....										1		1
<i>Agriculture:</i>												
Stockmen.....	2		1							1		4
Dairy and creamery.....		1						1				2
Testing.....									1	1		2
Farming.....		1	1				1	1	2	2	4	12
Married women ²	8	3	1	3	4	3	4	5	5	5	4	45
(Of this number the following were teachers).												
Miscellaneous and unknown.....	4	2	1	3	3	3	4	3	5	5		33
	1	3	1	3	3	1				3		15
Total.....	26	30	18	15	24	18	23	26	22	36	27	264

¹ Includes civil, electrical, and mechanical engineering. ² Counted only as married women in totals.

D. SPECIAL STUDENTS.

(See Chapter V.)

At a meeting of the university senate held February 3, 1916, the council of administration reported in substance its action for the portion of the then current academic year which had elapsed. Its report contained the following statements:

In the first semester, voted to permit 12 students to register with fewer than 10 hours; voted to refuse this permission to 3 students.

Voted to permit 19 students to register for the second semester in fewer than 10 hours.

In addition to these votes of the council of administration the committee has the report of the registrar, as follows: Special students who took less than 10 hours, first semester, 17; second semester, 17.

Accepting the registrar's figures as representing the actual condition during the last academic year (the council's votes were merely permissive and related apparently only to the cases brought to its attention), it appears that the university made exceptions of its own rule on this matter in 13.6 per cent of the cases. There may be excellent reasons why special students should be allowed to pursue courses amounting to less than 10 hours a week, but the committee thinks the university had better change the regulation than except so high a percentage of candidates from its application.

The committee would also point out that a large number of special students must almost inevitably exercise a depressing effect on the general standards of the university, even if no unusual concessions are made in their behalf. Wherever any considerable group of unprepared students is congregated in a single class, the progress of that class is necessarily impeded. The pace of a class is more likely to be set by those at the bottom than by those at the top. The only safeguard against this result is a system of ruthless elimination of the laggards. Instructors at the University of Nevada are, under the rule quoted below (see p. 84 of the catalogue of April, 1916), allowed to make necessary eliminations:

At any time an instructor may drop from the class a student who is seriously neglecting his work. Notice of such action must be reported by the instructor to the registrar and to the chairman of the delinquent scholarship committee.

Nevertheless, anyone familiar with American higher institutions knows that instructors are, as a rule, extremely reluctant to make exclusions on these terms. The committee is convinced that a more effective means of maintaining a desired standard is for the university to accept only such students as are likely to meet all the requirements of the courses which they elect to follow. That special students tend to rank lower than regulars at the University of Nevada (as elsewhere) appears to be demonstrated by the tabulation of averages for the year 1915-16, on page 75.

E. SALARIES, COURSES, AND TEACHING FORCE.

(See Chapter VIII.)

(a) *Instructors and salaries.*

Courses and instructors.	Salary.	Student clock hours.	
		First semester.	Second semester.
IN THE YEAR 1914-15.			
Accounting and law: Professor.....	\$2,400	60	101
Agromony:			
Professor ($\frac{1}{2}$ time).....	350	.....	38
Assistant professor.....	1,800	162	76
Total (1 $\frac{1}{2}$).....	2,150	162	114
Average.....	1,882	142	100
Animal husbandry: Professor.....	2,400	156	120
Art: Associate professor ($\frac{1}{2}$ time).....	600	200	200
Biology:			
Professor.....	2,400	316	229 $\frac{1}{2}$
Assistant professor.....	1,500	36	247
Instructor.....	1,500	190	220
Total (3).....	5,400	531	696 $\frac{1}{2}$
Average.....	1,800	177	232
Chemistry:			
Professor 1.....	2,400	316 $\frac{1}{2}$	268
Instructor ($\frac{1}{2}$ time).....	353	481	.....
Instructor ($\frac{1}{2}$ time).....	600	.....	241
Total (2).....	3,353	797 $\frac{1}{2}$	609
Average.....	1,677	399	304
Civil engineering:			
Professor.....	2,400	221	324
Assistant ($\frac{1}{2}$ time).....	261	80	47 $\frac{1}{2}$
Total (1 $\frac{1}{2}$).....	2,661	301	371 $\frac{1}{2}$
Average.....	1,985	226	279
Dairying: Assistant professor ($\frac{1}{2}$ time).....	900	73	.....
Economics and sociology: Professor.....	2,400	87	66
Education and psychology:			
Assistant professor.....	1,500	408	391
Assistant professor.....	2,000	140	160
Total (2).....	3,500	548	551
Average.....	1,750	274	275
English:			
Professor.....	2,400	160	128
Assistant professor.....	2,000	298	267
Instructor.....	1,600	236	260
Total (3).....	6,000	694	659
Average.....	2,000	231	219
Electrical and mechanical engineering and mechanic arts:			
Professor.....	2,400	268 $\frac{1}{2}$	170
Assistant professor ($\frac{1}{2}$ time).....	725	.....	160 $\frac{1}{2}$
Instructor ($\frac{1}{2}$ time).....	125	.....	33
Assistant professor.....	1,800	455	643 $\frac{1}{2}$
Assistant ($\frac{1}{2}$ time).....	247	.....	56
Associate professor ($\frac{1}{2}$ time).....	1,200	247 $\frac{1}{2}$	35
Assistant professor ($\frac{1}{2}$ time).....	917	189 $\frac{1}{2}$	.....
Assistant.....	45	.....	.....
Total (4 $\frac{1}{2}$).....	7,459	1,160	1,008
Average.....	1,790	279	264

¹ Gave assistance during the illness of an instructor.

(a) *Instructors and salaries—Continued.*

Courses and instructors.	Salary.	Student clock hours.	
		First semester.	Second semester.
IN THE YEAR 1914-15—continued.			
Geology and mineralogy: Professor.....	\$2,100	242	316
German language and literature: Instructor.....	1,500	146	112
Greek language and literature:			
Professor Latin ($\frac{1}{2}$ time).....	1,200	9	12
Professor Greek ($\frac{1}{2}$ time).....	1,800	29	22
Total (1 $\frac{1}{2}$).....	3,000	38	34
Average.....	2,400	30	27
History:			
Professor.....	2,400	206	185
Instructor.....	1,500	103	88
Total (2).....	3,900	309	273
Average.....	1,950	154	137
Home economics: Associate professor.....	1,800	322	252
Latin language and literature:			
Professor ($\frac{1}{2}$ time).....	1,200	35	37
Professor ($\frac{1}{2}$ time).....	1,200	74	81
Professor of Greek ($\frac{1}{2}$ time).....	600	24	24
Total (1 $\frac{1}{2}$).....	3,000	133	142
Average.....	2,400	106	114
Mathematics:			
Professor.....	2,400	455	286
Assistant ($\frac{1}{2}$ time).....	800	98	33
Instructor ($\frac{1}{2}$ time).....	600	.....	113
Instructor ($\frac{1}{2}$ time).....	160	.....	51
Total (2).....	3,461	548	432
Average.....	1,730	274	216
Mining and metallurgy:			
Professor.....	3,000	74	80
Assistant professor ($\frac{1}{2}$ time).....	1,000	55 $\frac{1}{2}$	78 $\frac{1}{2}$
Total (1 $\frac{1}{2}$).....	4,000	129 $\frac{1}{2}$	158 $\frac{1}{2}$
Average.....	2,000	64 $\frac{1}{4}$	79 $\frac{1}{4}$
Music: Instructor.....	1,500	156	134
Physics: Professor.....	2,400	391	243
Physical education for women: Instructor.....	1,500	136	123
Romance languages: Professor.....	2,400	269	224
Veterinary science: Professor ($\frac{1}{2}$ time).....	200	.....	104
IN THE YEAR 1915-16.			
Accounting and law: Professor.....	2,500	80	115
Agronomy: Professor ($\frac{1}{2}$ time).....	1,000	176	331 $\frac{1}{2}$
Animal husbandry: Professor.....	2,500	247 $\frac{1}{2}$	189
Art: Associate professor ($\frac{1}{2}$ time).....	900	260	330
Biology:			
Professor.....	2,500	505 $\frac{1}{2}$	211
Assistant professor.....	1,600	63	313 $\frac{1}{2}$
Instructor.....	1,600	410 $\frac{1}{2}$	265
Total (3).....	5,600	979	779 $\frac{1}{2}$
Average.....	1,867	326	259
Chemistry:			
Professor.....	2,500	420	300 $\frac{1}{2}$
Professor ($\frac{1}{2}$ time).....	.....	20	8
Instructor.....	1,200	533	530
Total (2 $\frac{1}{2}$).....	3,700	973	818 $\frac{1}{2}$
Average.....	1,708	461	424
Civil engineering:			
Professor.....	2,500	245 $\frac{1}{2}$	230 $\frac{1}{2}$
Assistant ($\frac{1}{2}$ time).....	222	65	33 $\frac{1}{2}$
Total (1 $\frac{1}{2}$ time).....	2,722	310 $\frac{1}{2}$	263 $\frac{1}{2}$
Average.....	2,041	232	196
Dairying: Assistant professor ($\frac{1}{2}$ time).....	775	.....	132
Economics and sociology: Professor.....	2,500	126	99
Education:			
Professor.....	3,000	86	69
Associate professor.....	2,200	172	225
Instructor.....	1,500	308	455
Total (3).....	4,000	566	749
Average.....	1,333	189	247

(a) *Instructors and salaries—Continued.*

Courses and instructors.		Salary.	Student clock hours.	
			First semester.	Second semester.
IN THE YEAR 1914-15.				
English:				
Professor.....		\$2,500	192	147
Assistant professor.....		2,000	282	270
Instructor.....		1,600	235	302
Total (3).....		6,100	709	719
Average.....		2,033	236	239
Electrical and mechanical engineering and mechanic arts:				
Professor.....		2,500	123	156
Instructor.....		1,437	254	217½
Assistant professor.....		1,800	200½	244½
Associate professor (½ time).....		900	165	165
Assistant (½ time).....		270	120	247½
Assistant professor (½ time).....		300		
Total (4½).....		7,207	961½	1,089½
Average.....		1,602	231	267
Geology and mineralogy: Professor.....		2,300	222½	202
German language and literature: Instructor.....		1,500	160	116
Greek language and literature:				
Professor (½ time).....		1,800	23	19
Professor of philosophy (½ time).....		300	9	6
Total (1).....		2,100	32	25
Average.....		2,400	36½	29½
History:				
Professor.....		2,500	240	228
Instructor.....		1,500	93	97
Assistant professor (½ time).....		300	15	8
Total (3½).....		4,300	348	333
Average.....		2,006	162	155
Home economics:				
Associate professor.....		2,000	262	303
Instructor.....		1,000	64	115
Total (2).....		3,000	316	418
Average.....		1,500	158	209
Latin language and literature:				
Professor (½ time).....		1,900	75	82
Professor of Greek (½).....		780	24	21
Professor of philosophy (½).....		500	25	26
Total (1½).....		3,180	124	128
Average.....		2,480	99	102
Mathematics:				
Professor.....		2,500	206	125
Instructor.....		1,360	240	205
Total (2).....		3,860	446	330
Average.....		1,925	223	165
Mining and metallurgy:				
Professor.....		3,000	93	51
Assistant professor (½ time).....		1,000	97	106
Total (1½).....		4,000	190	157
Average.....		2,666	127	105
Music: Instructor.....		1,500	196	174
Philosophy: Professor (½ time).....		1,600	37	73
Physical education for women: Assistant professor.....		1,500	184	170
Physics: Professor.....		2,500	445½	391
Romance languages:				
Professor.....		2,500	129	105
Instructor.....		1,500	276	172
Total (2).....		4,000	405	277
Average.....		2,000	203	138

(b) Courses given during first semester, 1915-16.

Courses.	Title of course.	Hours credit.	Hours per week.				
			Lec- tures.	Labo- ratory.	Men.	Wom- en.	Total.
Accounting:							
21.....	Advanced accounting.....	3	0	2	5	4	9
22.....	Cost accounting.....	1	0	1	12	0	12
Agriculture (teaching).....	Teaching agriculture.....	3	3	0	5	0	5
Agriculture.....	Practicum.....				18	0	18
Agronomy:							
1.....	Elementary.....	3	3	0	23	0	23
23.....	Cereals.....	4	4	0	7	0	7
27.....	Farm management.....	5	5	0	2	0	2
Animal husbandry:							
3.....	Dairying.....	4	2	2	15	0	15
4.....	Stock judging.....	4	2	2	19	0	19
26.....	Advanced stock judging.....	3	0	3	8	0	3
Art:							
1.....	Elementary art.....	1	0	1	3	46	48
2.....	Elementary art.....	1	0	1	0	14	14
5.....	Teachers' course.....	2	0	2	0	20	20
21.....	Advanced art.....	3	0	3	0	6	6
22.....	Advanced art.....	3	0	3	0	6	6
Arts, manual.....	Woodwork.....	2	0	2	1	6	7
Biology:							
Botany—							
2.....	Elementary botany.....	3	2	1	3	2	5
21.....	Taxonomy.....	3	2	1	4	0	4
22.....	Plant physics.....	3	2	1	2	0	2
Hygiene—							
1.....	Human anatomy.....	3	2	1	6	31	37
23.....	Rural hygiene.....	4	4	0	2	0	2
2.....	Physiology and hygiene.....	3	8	0	0	26	26
Nature study.....	General nature study.....	2	1	1	0	4	4
Zoology—							
1.....	General zoology.....	4	2	2	30	5	35
6.....	Comparative anatomy.....	5	3	2	4	3	7
25.....	Histology.....	5	3	2	2	1	3
Chemistry:							
1.....	Elementary.....	3	3	0	36	3	39
2.....	Elementary laboratory.....	3	0	3	26	3	31
3.....	General chemistry.....	2	2	0	55	4	59
4.....	Qualitative analysis.....	2	0	2	60	7	57
5.....	Quantitative analysis.....	3	0	3	12	0	12
6.....	Volumetric analysis.....	3	0	3	1	1	2
10.....	Agricultural chemistry.....	2	2	0	8	3	10
11.....	Agricultural laboratory.....	2	0	2	16	0	10
24.....	Industrial chemistry.....	2	0	2	3	1	4
25.....	Technical analysis.....	2	0	2	1	1	2
31.....	Special analysis.....	3	0	3	1	0	1
Civil engineering:							
21.....	Surveying.....	4	2	2	20	0	20
22.....	Highway engineering.....	2	2	0	6	0	6
23.....	Structural analysis.....	4	4	0	3	0	3
24.....	Structural design.....	1	1	0	1	0	1
25.....	Railroad engineering.....	5	3	2	5	0	5
28.....	Hydraulics.....	3	3	0	14	0	14
1.....	Map drawing.....	1	0	1	1	0	1
33.....	Reinforced concrete.....	3	2	1	1	0	1
36.....	Current engineering litera- ture.....	1	1	0	4	0	4
28a.....	Hydraulics.....	2	2	0	5	0	5
29.....	Graphic statics.....	2	0	2	13	0	13
Development of thought.....							
1.....	Graphic statics.....	1	1	0	0	13	13
Economics:							
1a.....	Principles of economy.....	3	3	0	19	3	22
24.....	Public control of industry.....	3	3	0	6	0	6
31.....	Introduction to study of so- ciology.....	3	3	0	3	5	8
Education:							
22.....	History of education.....	2	2	0	0	28	28
24.....	High-school organization.....	3	3	0	0	10	10
2b.....	Methods in language.....	3	3	0	2	41	43
2c.....	Methods in geography.....	2	2	0	2	39	41
3.....	Child literature.....	1	1	0	0	8	8
4.....	Elementary practice teach- ing.....	5	5	0	0	8	8
1a.....	Principles of teaching.....	2	2	0	2	32	34
5.....	Elementary psychology.....	3	3	0	3	28	31
26.....	Advanced practice teaching.....	5	0	5	0	1	1

(b) Courses given during first semester, 1915 16—Continued.

Courses.	Title of course.	Hours credit.	Hours per week.				
			Lectures.	Laboratory.	Men.	Women.	Total.
Electrical engineering:							
23.....	Advanced alternating currents.	3	2	1	6	0	6
25.....	Electric current, Engineering laboratory.	2	0	2	10	0	10
26.....	Electric current, Engineering laboratory.	2	0	2	6	0	6
21.....	Direct currents.	3	3	0	8	0	8
English zero.	Composition and rhetoric.	0	3	0	8	0	8
1a.....	Composition and rhetoric.	3	3	0	15	14	29
1b.....	Composition and rhetoric.	3	3	0	16	12	28
1c.....	Composition and rhetoric.	3	3	0	11	17	28
1d.....	Composition and rhetoric.	3	3	0	22	6	28
2a.....	Advanced composition.	3	3	0	13	3	16
3.....	Argumentation.	2	2	0	12	0	12
4.....	History of English literature.	3	3	0	2	18	20
6.....	Public speaking.	2	2	0	23	8	31
7.....	Expression.	1	1	0	1	19	20
8.....	Advanced public speaking.	1	1	0	2	2	4
9.....	Advanced expression.	1	1	0	1	9	10
10.....	Advanced public speaking.	1	1	0	0	1	1
11.....	Advanced expression.	1	1	0	0	1	1
27.....	Chaucer.	3	3	0	0	15	15
26.....	Shakespeare.	3	3	0	0	9	9
29.....	Old English.	3	3	0	0	1	1
31.....	Modern drama.	3	3	0	1	8	9
French:							
2.....	Second year French.	3	3	0	1	17	18
24.....	French poetry.	2	2	0	0	8	8
26.....	Advanced prose composition.	1	1	0	0	9	9
20.....	French dramatists.	2	2	0	1	8	9
32.....	Teachers' course.	2	2	0	1	4	5
41.....	Old French.	3	3	0	1	0	1
42.....	Chateaubriand.	2	2	0	1	0	1
40.....	Thesis.	1	1	0	1	0	1
1.....	Elementary French.	4	4	0	4	10	14
Geology:							
5.....	Elementary.	3	3	0	10	0	10
21.....	General geology.	3	3	0	15	0	15
22.....	Economic geology.	3	3	0	6	0	6
German:							
1.....	Elementary German.	5	5	0	7	8	15
2.....	Intermediate German.	3	3	0	4	8	12
3.....	Introduction to classics.	2	2	0	0	11	11
3a.....	Prose composition.	1	1	0	0	12	12
23.....	History of German literature.	3	3	0	0	6	6
30.....	Middle high German.	2	2	0	1	2	3
Greek:							
1.....	Elementary Greek.	5	5	0	2	0	2
1b.....	Anabasis.	3	3	0	4	0	4
3.....	Prose composition.	1	1	0	1	0	1
25.....	Plato's Republic.	3	3	0	1	2	3
History:							
1.....	Beginnings of western civilization.	3	3	0	8	38	46
2.....	Modern Europe.	3	3	0	3	7	10
3.....	Women's history.	1	1	0	0	14	14
4.....	American history.	3	3	0	3	0	3
21.....	Teachers' course.	1	1	0	0	5	5
25.....	Constitutional history of the United States.	3	3	0	4	0	4
26.....	Westward expansion.	2	2	0	3	10	13
28.....	Nevada research.	1	1	0	0	1	1
30.....	Pacific slope.	2	2	0	1	3	4
31.....	Principles and practice of politics.	2	2	0	1	2	3
32.....	Colonization.	2	2	0	0	4	4
34.....	Economic and political problems.	2	2	0	5	5	10
40.....	Thesis.	1	1	0	1	2	3
41.....	Graduate thesis.	1	1	0	0	2	2
42.....	Comparative Federal institutions.	3	3	0	1	2	3
Home economics:							
1.....	Elementary.	2	2	1	0	17	17
3.....	Food preparation.	3	2	1	0	14	14
5.....	Dietetics.	2	1	1	0	10	10
9.....	Household administration.	2	2	0	0	9	9

(b) Courses given during first semester, 1915-16—Continued.

Courses.	Title of course.	Hours credit.	Hours per week.				
			Lec- tures.	Labo- ratory.	Men.	Wom- en.	Total.
Home economics—Con.							
13.....	Elementary sewing.....	3	1	3	0	4	4
14.....	Dressmaking.....	2	0	3	0	7	7
20.....	Special problems.....	2	0	2	0	3	3
Italian:							
1.....	Reading and grammar.....	3	3	0	3	3	5
Latin:							
C.....	Beginning Latin.....	5	5	0	3	2	4
D.....	Vergil's <i>Aeneid</i>	2	3	0	3	2	5
6.....	Advanced prose composition.....	1	1	0	4	0	4
9.....	Sight translation.....	1	1	0	0	2	2
24.....	Modern art.....	2	2	0	1	5	6
25.....	Greek and Roman art.....	2	2	0	0	5	5
30.....	Ancient classical myths.....	1	1	0	0	9	9
31.....	Cicero and Horace.....	3	3	0	1	5	6
3.....	Prose composition.....	1	1	0	3	5	7
4.....	Livy.....	2	2	0	3	5	8
Law:							
21.....	Elementary law.....	2	2	0	7	1	8
23.....	Advanced law.....	2	2	0	2	2	4
Mathematics:							
7.....	Analytic geometry.....	3	3	0	31	2	33
3.....	Trigonometry.....	2	2	0	1	1	2
20.....	Analytic mechanics.....	3	3	0	14	0	14
23.....	Solid analytical geometry.....	2	2	0	3	0	2
1.....	Advanced algebra.....	2	2	0	16	4	20
7.....	Solid geometry.....	2	2	0	11	0	11
2.....	Analytic geometry.....	5	5	0	3	4	7
8.....	Differential calculus.....	5	5	0	23	0	23
21.....	Mechanics of materials.....	2	2	0	14	0	14
Mechanic arts:							
1.....	Woodshop.....	2	0	2	26	0	26
2.....	Forge.....	2	0	2	21	0	21
3.....	Machine shop.....	2	0	2	26	0	26
Mechanical engineering:							
7.....	Gas engines.....	2	2	0	23	0	23
23.....	Machine design.....	2	0	3	10	0	10
25.....	Thermodynamics.....	3	3	0	10	0	10
28.....	Valve gears.....	2	2	0	8	0	8
30.....	Experimental engineering.....	2	0	2	4	0	4
2.....	Mechanical drawing.....	1	0	1	14	1	15
3.....	Free-hand drawing.....	2	0	2	15	1	16
1.....	Power and power trans- mission.....	2	2	0	20	0	20
27.....	Industrial organization.....	2	2	0	6	0	6
Metallurgy:							
24.....	Copper, lead, and zinc.....	2	3	0	8	0	8
21.....	Assaying.....	2	0	2	9	0	9
25.....	Ore dressing.....	3	2	1	6	0	6
40.....	Research.....	2	0	2	2	0	2
41.....	Advanced assaying.....	1	0	1	1	0	1
42.....	Wet assaying method.....	2	0	2	2	0	2
Military:							
1.....	Drill.....	1	0	2	69	0	69
3.....	Drill.....	1	0	2	44	0	44
23.....	Minor tactics.....	1	1	0	14	0	14
24.....	Duties of commissioned officers.....	1	1	0	10	0	10
Mining:							
21.....	Elements of mining.....	3	3	0	6	0	6
23.....	Lode mining.....	3	3	0	5	0	5
25.....	Mining design.....	2	2	0	2	0	2
26.....	Seminar.....	1	1	0	4	0	4
40.....	Research.....	2	2	0	1	0	1
Mineralogy:							
1.....	Determinative mineralogy.....	2	1	1	21	0	21
21.....	Optical properties.....	1	1	0	7	0	7
23.....	Optical properties (labora- tory).....	1	0	1	7	0	7
Music:							
1.....	Elements of music.....	1	2	0	3	37	39
5.....	Methods.....	1	2	0	0	24	24
24.....	Chorus.....	1	2	0	0	22	23
21.....	Elementary harmony.....	2	2	0	0	7	7
23.....	Advanced harmony.....	2	2	0	0	3	3
Philosophy 21.....	Ethics.....	3	3	0	2	7	9

(b) Courses given during first semester, 1915-16—Continued.

Courses.	Title of course.	Hours credit.	Hours per week.				
			Lec- tures.	Labo- ratory.	Men.	Wom- en.	Total.
Physics:							
1	Electric heat and light	4	2	1	22	1	23
2	Electric heat and light	5	5	0	20	0	20
3	Electric heat (laboratory)	2	0	2	33	0	33
21	Electrical measurements	1	0	1	2	0	2
Physical education:							
1	Freshmen	1	0	1	0	44	44
2	Sophomores	1	0	1	0	33	33
11	Advanced work	1	0	1	0	5	5
12	Material course	1	0	1	0	8	8
21	History of physical education	1	1	0	0	5	5
32	Theory and practice	1	0	1			
Spanish:							
1	Elementary Spanish	3	3	0	6	15	21
2	Reading and composition	2	2	0	3	5	8
3	Conversation	2	2	0	28	1	20
23	Reading and composition	2	2	0	2	3	5

(c) List of courses given during second semester, 1915-16.

Courses.	Title of course.	Hours credit.	Hours per week.				
			Lec- tures.	Labo- ratory.	Men.	Wom- en.	Total.
Accounting:							
21	General accounting	1	0	1	6	2	8
22	Cost accounting	1	0	1	12	0	12
Agronomy:							
4	Forage crops	4	4	0	24	0	24
6	Farm mechanics	3	3	0	17	0	17
26	Irrigation	5	5	0	4	0	4
Animal husbandry:							
2	Poultry husbandry	3	3	0	15	0	15
1	Breeds of live stock	3	3	0	25	0	25
22	Genetics	3	3	0	2	0	2
23	Live-stock feeding	3	0	3	14	0	14
25	Live-stock registration	1	1	0	4	0	4
26	Live-stock management	3	3	0	5	0	5
Art:							
1	Elementary art	1	0	1	1	51	52
2	Intermediate art	1	0	1	3	12	15
5	Teachers' course	1	0	1	1	17	18
21	Advanced art	1	0	1	0	4	4
22	Advanced art	1	0	1	0	4	4
Arts, manual 5.	Woodwork	2	0	2	1	2	3
Biology:							
Bacteriology 24.	General bacteriology	5	3	2	3	1	4
Botany—							
1	Elementary botany	4	2	2	23	6	20
24	Cryptogamic botany	4	2	2	7	0	7
25	Plant pathology	3	2	1	2	1	3
Hygiene 1.	Human anatomy	3	2	1	5	24	29
Horticulture 1.	Elementary horticulture	3	2	1	4	0	4
Nature study 1.	General nature study	2	1	1	0	4	4
Zoology—							
10	Economic zoology	3	2	1	7	0	7
26	Experimental physiology	1	0	1	1	0	1
Chemistry:							
1	Elementary chemistry	3	3	0	32	3	35
3	General chemistry	2	2	0	39	0	41
4	Qualitative analysis	2	0	2	4	0	4
4a	Qualitative analysis	3	0	3	29	4	33
6	Volumetric analysis	3	1	2	11	0	11
14	Agricultural chemistry	2	2	0	4	0	4
15	Agricultural analysis	2	2	0	7	0	7
16	Household chemistry	2	2	0	0	1	1
17	Household chemistry (lab- oratory)	2	0	2	0	1	1
21	Soils	2	0	2	6	0	6
22	Soil analysis	2	2	0	4	0	4
31	Advanced analysis	3	0	3	1	0	1
40	Undergraduate thesis	2	2	0	1	0	1
47	Advanced organic chemistry	2	2	0	1	0	1
60	Graduate thesis	3	3	0	1	0	1

(c) List of courses given during second semester, 1915-16—Continued.

Courses.	Title of course.	Hours credit.	Hours per week.				
			Lec- tures.	Labo- ratory.	Men.	Wom- en.	Total.
Civil engineering:							
1.....	Map drawing.....	1	0	1	3	0	3
21.....	Surveying.....	4	2	2	12	0	12
26.....	Sewerage.....	3	3	0	6	0	6
27.....	Masonry construction.....	3	3	0	11	0	11
24.....	Structural design.....	3	1	2	2	0	2
29a.....	Advanced graphic statics.....	3	0	3	2	0	2
32.....	Seminar.....	0	0	0	1	0	1
33.....	Reinforced concrete.....	3	1	2	1	0	1
34.....	Water-power engineering.....	3	3	0	6	0	4
36.....	Engineering literature.....	1	1	0	4	0	6
29.....	Graphic statics.....	2	0	2	4	0	4
Dairying 5.....	Principles of dairying.....	3	1	2	16	0	15
Development of thought		1	1	0	0	8	8
Economics:							
1b.....	Principles of economics.....	3	3	0	11	3	14
23.....	International trade.....	3	3	0	4	0	4
32.....	Social betterment.....	3	3	0	1	5	6
Education:							
22.....	History of education.....	2	2	0	0	30	30
2a.....	Methods in arithmetic.....	3	3	0	1	44	45
2d.....	Methods in history.....	2	2	0	1	47	48
3.....	Child literature.....	1	1	0	0	12	12
4a.....	Practice teaching.....	5	0	5	1	16	17
1b.....	School law and management.....	2	2	0	1	36	37
6.....	Child study.....	3	3	0	0	11	11
23.....	Principles of education.....	3	3	0	3	20	23
26.....	High-school practice teaching.....	5	0	5	3	8	11
Electrical engineering:							
24.....	Electric railways.....	3	3	0	5	0	5
25.....	Electrical engineering.....	2	0	2	7	0	7
26.....	.....do.....	2	0	2	6	0	6
28.....	Electrical design.....	2	2	0	8	0	8
1.....	Elements electrical engineer- ing.....	2	2	0	23	0	23
22.....	Alternating currents.....	3	3	0	5	0	5
27.....	Power plants.....	1	1	0	11	0	11
English:							
1a.....	Composition and rhetoric.....	3	3	0	16	15	31
1b.....	.....do.....	3	3	0	7	12	19
1c.....	.....do.....	3	3	0	7	19	26
1d.....	.....do.....	3	3	0	20	9	29
3.....	Argumentation.....	2	2	0	12	0	12
4.....	History of English literature.....	3	3	0	0	18	18
6.....	Public speaking.....	2	2	0	17	4	21
7.....	Expression.....	1	1	0	0	21	21
8.....	Advanced public speaking.....	1	1	0	2	1	3
9.....	Advanced expression.....	1	1	0	0	8	8
10.....	Advanced public speaking.....	1	1	0	0	2	2
11.....	Advanced expression.....	1	1	0	0	1	1
26.....	Shakespeare.....	3	3	0	0	8	8
28.....	Milton.....	3	3	0	0	16	16
35.....	Modern English grammar.....	3	3	0	0	4	4
21.....	Short story.....	3	3	0	4	8	9
French:							
1.....	Beginning French.....	4	4	0	2	11	13
2.....	Second-year French.....	3	3	0	1	15	16
24.....	French poetry.....	2	2	0	0	6	6
26.....	Advanced prose composition.....	1	1	0	0	9	9
31.....	Modern drama.....	2	2	0	1	9	10
32.....	Teachers' course.....	2	2	0	1	4	5
41.....	Old French.....	3	3	0	1	0	1
42.....	Romantic school.....	2	2	0	1	0	1
60.....	Thesis.....	3	3	0	1	0	1
Geology:							
22.....	Historical geology.....	2	2	0	13	0	13
23.....	Petrography.....	2	2	0	4	0	4
24a.....	Petrography (laboratory).....	1	0	1	8	0	5
24b.....	.....do.....	1	0	1	4	0	4
26.....	Economic geology.....	3	3	0	4	0	4
27.....	Field geology.....	1	0	1	6	0	6
40.....	Research geology.....	1	0	1	1	0	1
German:							
1.....	Beginning German.....	5	5	0	1	3	4
2.....	Intermediate.....	3	3	0	1	8	9
3.....	Introduction to classics.....	2	2	0	0	10	10
3a.....	Advanced composition.....	1	1	0	0	11	11
23.....	History of German literature.....	3	3	0	0	6	6
25.....	Teachers' course.....	2	2	0	0	2	2
30.....	Middle German.....	1	1	0	0	2	2

(c) List of courses given during second semester, 1915-16—Continued.

Courses.	Title of course.	Hours credit.	Hours per week.				
			Lectures.	Laboratory.	Men.	Women.	Total.
Greek:							
1.....	Anabasis.....	5	5	0	1	1	2
1b.....	do.....	3	3	0	3	0	3
26.....	Demosthenes and Plato.....	3	3	0	1	1	2
History:							
1.....	Beginning western civilization.....	3	3	0	7	33	40
2.....	Modern Europe.....	3	3	0	3	7	10
3.....	Woman in history.....	1	1	0	0	15	15
4.....	American history.....	3	3	0	1	2	3
21.....	Teachers' course.....	1	1	0	0	2	2
25.....	Constitutional history of the United States.....	3	3	0	4	0	4
26.....	Westward expansion.....	2	2	0	4	11	15
History:							
31.....	Principles and practice of politics.....	2	2	0	3	0	3
34.....	Economic and political problems.....	3	3	0	2	6	8
32.....	Colonial government.....	2	2	0	1	4	5
30.....	Pacific slope.....	2	2	0	2	3	5
40.....	Thesis.....	1	1	0	0	2	2
40.....	Thesis, graduate.....	3	3	0	0	2	2
41.....	Federal institutions.....	3	3	0	1	2	3
Home economics:							
2.....	Elements of home economics.....	3	1	2	0	22	22
4.....	Food preparation.....	3	1	2	0	17	17
5.....	Dietetics.....	3	1	2	0	8	8
10.....	Household administration.....	2	2	0	0	10	10
13.....	Elementary sewing.....	3	1	2	0	11	11
15.....	Dressmaking.....	3	1	2	0	12	12
Italian I.....	Beginning Italian.....	3	3	0	2	4	6
Latin:							
C.....	Beginning Latin.....	5	5	0	5	0	5
D.....	Vergil's <i>Æneid</i>	3	3	0	1	4	5
2.....	Horace and Seneca.....	3	3	0	1	5	6
3.....	Prose composition.....	1	1	0	2	5	7
5.....	Plautus and Terence.....	3	3	0	2	5	7
6.....	Advanced prose composition.....	1	1	0	3	0	3
9.....	Sight translation.....	1	1	0	0	2	2
24a.....	Tacitus, <i>Agriicola</i>	2	2	0	2	4	6
25a.....	Modern arts.....	2	2	0	0	8	8
30.....	Ancient mythology.....	1	1	0	0	9	9
Law:							
21.....	Elementary law.....	3	3	0	15	7	22
22.....	Advanced law.....	3	3	0	4	0	4
Mathematics zero.....	Elementary algebra.....	0	3	0	8	1	9
7.....	Analytical geometry.....	3	3	0	16	2	18
20.....	Analytic mechanics.....	3	3	0	12	0	12
3.....	Trigonometry.....	3	3	0	24	3	27
5.....	Differential calculus.....	3	3	0	12	3	15
9.....	Integral calculus.....	3	3	0	18	0	18
45.....	Vector analysis.....	3	3	0	1	0	1
21.....	Mechanics of materials.....	2	2	0	5	0	5
23.....	Theory of equations.....	2	2	0	4	2	6
B.....	Plane geometry.....	0	3	0	7	1	8
Mechanic arts:							
1.....	Wood shop.....	2	0	2	5	0	5
2.....	Forge.....	2	0	2	16	0	16
3.....	Machine shop.....	3	0	2	19	0	19
4.....	Foundry.....	2	0	2	4	0	4
5.....	Shop management.....	2	0	2	4	0	4
Mechanical engineering:							
4.....	Mechanical drafting.....	2	0	2	21	0	21
5.....	Kinematics.....	2	0	2	8	0	10
25.....	Thermodynamics.....	3	0	3	8	0	8
29.....	Pumping machinery.....	2	2	0	6	0	6
30.....	Experimental engineering.....	2	2	0	5	0	5
2.....	Mechanical drawing.....	1	0	1	2	1	1
3.....	Free-hand drawing.....	2	0	2	2	0	3
6.....	Descriptive geometry.....	2	0	2	22	0	22
24.....	Steam boilers.....	3	3	0	9	0	9
Military:							
1.....	Infantry drill.....	1	0	2	46	0	46
2.....	Regular and guard manual.....	1	1	0	43	0	43
3.....	Advanced infantry drill.....	1	0	2	49	0	49
4.....	Regular and minor tactics.....	1	1	0	35	0	35
23.....	Minor tactics.....	1	1	0	18	0	18
24.....	Duties commissioned officers.....	1	0	2	7	0	7

(c) List of courses given during second semester, 1915-16—Continued.

Courses.	Title of course.	Hours credit.	Hours per week.				
			Lec- tures.	Labo- ratory.	Men.	Wom- en.	Total.
Mineralogy:							
2.....	Blowpipe analysis.....	2	0	2	12	0	12
3.....	Descriptive mineralogy.....	2	2	0	8	0	8
Mining:							
22.....	Placer mining.....	3	3	0	9	0	9
24.....	Economics of mining.....	3	3	0	4	0	4
26.....	Seminar 1.....	1	1	0	1	0	1
27.....	Seminar 2.....	1	1	0	5	0	5
28.....	Mining law.....	1	1	0	4	0	4
29.....	First aid.....	1	1	0	3	0	3
30.....	Mining trip.....	0	1	0	8	0	8
42.....	Tin mining.....	1	1	0	2	0	2
Metallurgy:							
22.....	Assaying.....	3	0	3	7	0	7
23.....	General metallurgy.....	2	0	2	3	0	3
26.....	Gold and silver.....	6	3	2	6	0	6
Music:							
1.....	Elementary music.....	1	2	0	1	35	36
6.....	Methods.....	1	2	0	0	24	24
21.....	Harmony.....	2	2	0	0	5	5
22.....	Advanced harmony.....	2	2	0	0	2	2
24.....	Chorus.....	1	2	0	0	20	20
Philosophy:							
2.....	Elementary logic.....	3	3	0	8	11	19
21.....	Ethics.....	3	3	0	1	5	6
Physics:							
1.....	Electricity, light, and sound.....	4	3	1	12	1	14
2.....	Electricity, light, and sound.....	6	5	0	30	0	30
3.....	Electricity, light, and sound.....	2	0	2	31	0	31
21.....	Electrical measurements.....	1	0	1	2	0	2
27.....	Electric lighting.....	2	1	1	2	0	2
Physical education:							
1.....	.....	1	0	2	0	41	41
2.....	.....	1	0	2	0	25	25
12.....	Material course.....	1	0	2	0	8	8
21.....	History of physical education.....	1	1	0	0	5	5
32.....	Theory and practice.....	1	0	1	0	6	6
Spanish:							
1.....	Beginning Spanish.....	3	3	0	3	14	17
2.....	Second year.....	2	2	0	2	5	7
3.....	Conversation.....	2	2	0	9	1	10
23.....	Classics.....	2	2	0	1	5	6

(d) Annual salaries of employees, arranged according to amount.

	1914-15	1915-16
President.....	\$6,000	\$6,000
Professor of accounting and law, vice president.....	3,000	3,000
Dean in education.....	3,000	3,000
Professor of agronomy, dean of college of agriculture.....	3,000	3,000
Professor of electrical and mechanical engineering, dean of college of engineering.....	3,000	3,000
Professor of Greek language and literature, dean of college of arts and sciences.....	3,000	3,000
Professor of mining and metallurgy, director of Mackay school of mines.....	3,000	3,000
Director of Nevada agricultural experiment station, entomologist.....	3,000	3,000
Director of State hygienic laboratory, bacteriologist.....	3,000	3,000
Director of Smith-Lever agricultural extension and boys' club leader.....	3,000	3,000
Director of State veterinary control service, bacteriologist and veterinarian.....	2,800	3,000
Professor of animal husbandry.....	2,500	2,500
Comptroller.....	2,400	3,000
Professor of chemistry.....	2,400	2,500
Professor of sociology and economics.....	2,400	2,500
Professor of civil engineering.....	2,400	2,500
Professor of Latin language and literature.....	2,400	2,500
Professor of Romance language and literature.....	2,400	2,500
Professor of biology.....	2,400	2,500
Professor of physics.....	2,400	2,500
Professor of mathematics.....	2,400	2,500
Professor of English language and literature.....	2,400	2,500
Professor of history and political science.....	2,400	2,500
Commissioner pure food and drug control and weights and measures laboratory.....	2,400	2,500
In charge range improvement agricultural experiment station.....	2,400	2,500

(d) Annual salaries of employees, arranged according to amount—Continued.

	1914-15	1915-16
Chemist, Nevada agricultural experiment station	\$2,400	\$2,500
Meteorologist, agricultural experiment station	2,400	2,500
Librarian	2,400	2,400
Professor of philosophy	2,400	2,400
Director of State hygienic laboratory	2,400	2,400
Dean of women	2,200	2,200
Associate professor of education	2,200	2,200
Professor of geology and mineralogy	2,100	2,300
Assistant bacteriologist and veterinarian, Nevada agricultural experiment station	2,000	2,200
Veterinarian, Smith-Lever agricultural extension	2,000	2,200
Associate professor of English language and literature	2,000	2,000
Assistant professor of mining and metallurgy	2,000	2,000
Associate professor of home economics	1,800	2,000
Associate professor of art and drawing	1,800	1,800
Assistant professor of agronomy	1,800	1,800
Assistant professor of electrical and mechanical engineering	1,800	1,800
Farm foreman	1,800	1,800
Superintendent of buildings and grounds	1,800	1,800
Assistant professor of education	1,800	1,800
Assistant professor of English language and literature	1,600	1,600
Assistant professor of education	1,600	1,600
Instructor of history and political science	1,500	1,500
Instructor of music	1,500	1,500
Assistant professor of electrical and mechanical engineering	1,500	1,800
Assistant professor of dairying	1,500	1,800
Home economics, Smith-Lever agricultural extension	1,500	1,600
Assistant professor of botany and horticulture	1,500	1,600
Instructor of biology	1,500	1,500
Assistant professor of German language and literature (April, 1916)	1,500	1,500
Director, physical education for men	1,200	1,200
Assistant professor of physical education for women	1,500	1,500
Master of Lincoln Hall	1,500	1,500
Assistant professor of Romance languages and literature	1,500	1,500
Instructor, electrical and mechanical engineering	1,500	1,500
Matron of Manzanita Hall	1,272	1,500
Instructor of mathematics	1,200	1,500
Analyst, State mining laboratory	1,200	1,500
Assistant comptroller	1,200	1,500
Secretary to president	1,200	1,200
Registrar	1,200	1,200
Clerk	1,200	1,200
Assistant entomologist, Nevada agricultural experiment station	1,200	1,200
Assistant chemist, Nevada agricultural experiment station	1,200	1,200
Instructor of chemistry	1,200	1,200
Head janitor	1,200	1,200
Inspector, pure food and drug control and weights and measures laboratory	1,200	1,200
Emeritus	1,200	1,200
Emeritus	1,200	1,200
Assistant, agronomist, Nevada agricultural experiment station	1,080	1,200
Farm foreman	1,080	1,200
Plumber, buildings and grounds	1,080	1,080
Fireman, heating plant	1,000	1,000
Fireman, heating plant	1,000	1,080
Assistant professor electrical and mechanical engineering	2,000	1,000
Observer, Nevada agricultural experiment station	1,000	900
Carpenter, buildings and grounds	900	900
Greenhouse man	900	900
Night watchman	900	900
Chemist, pure food and drug control and weights and measures laboratory	900	1,600
Veterinarian, State veterinary control service	696	696
Bandmaster, military science and tactics	500	500
Commandant, military science and tactics	450	450
Matron of hospital	300	300
Secretary to board of regents	300	300
Librarian, Nevada agricultural experiment station	300	300
Stenographer, Nevada agricultural experiment station	400	400
Dairy husbandman, Smith-Lever agricultural extension	1,800	1,800
Principal, Tonopah school of mines	2,250	2,250
Professor of education	2,400	2,400
Chemist, pure food and drug control and weights and measures laboratory	900	900
Instructor, home economics	1,000	1,000

(e) Annual salaries of employees, by departments.

		1914-15	1915-16
Administration.....	President.....	\$6,000	\$6,000
	Secretary board of regents.....	300	300
	Secretary to president.....	1,200	1,200
	Registrar.....	1,200	1,200
	Comptroller.....	2,400	3,000
	Clerk.....	1,200	.....
	Assistant comptroller.....	.....	1,500
Accounting and law.....	Professor and vice president.....	3,000	3,000
Agronomy.....	Professor and dean of college of agriculture.....	3,000	3,000
	Assistant professor.....	1,800	.....
Animal husbandry.....	Professor.....	2,500	2,500
Art and drawing.....	Associate professor.....	1,800	1,800
Biology.....	Professor.....	2,400	2,500
	Assistant professor botany and horticulture.....	1,600	1,600
	Instructor.....	1,500	1,500
Chemistry.....	Professor.....	2,400	2,500
	Instructor.....	1,200	1,200
Civil engineering.....	Professor.....	2,400	2,500
Dairying.....	Assistant professor.....	.....	1,800
Economics and sociology.....	Professor.....	2,400	2,500
Education.....	Professor.....	2,200	.....
	Associate professor.....	.....	.....
	Assistant professor.....	1,800	.....
	Dean in education.....	.....	3,000
	Associate professor.....	.....	2,200
	Instructor.....	.....	1,500
Electrical and mechanical engineering.....	Professor and dean college of engineering.....	3,000	3,000
	Assistant professor.....	1,800	.....
	Assistant professor.....	2,000	.....
	Assistant professor.....	.....	1,800
	Instructor.....	.....	1,500
English language and literature.....	Professor.....	2,400	2,500
	Assistant professor.....	2,000	2,000
	Instructor.....	1,600	1,600
Geology and mineralogy.....	Professor.....	2,100	2,300
German language and literature.....	Instructor.....	1,500	1,500
Greek language and literature.....	Professor and dean college of arts and science.....	3,000	3,000
History and political science.....	Professor.....	2,400	2,500
	Instructor.....	1,500	1,500
Home economics.....	Assistant professor.....	1,800	2,000
	Instructor.....	.....	1,000
Latin language and literature.....	Professor.....	2,400	2,500
Mathematics.....	Professor.....	2,400	2,500
	Instructor.....	1,200	1,500
Mining and metallurgy.....	Professor and director Mackay school of mines.....	3,000	3,000
	Assistant professor.....	2,000	2,000
Military science and tactics.....	Commandant.....	500	500
	Bandmaster.....	600	600
Music.....	Instructor.....	1,500	1,500
Philosophy.....	Professor.....	2,400	2,400
Physical education for women.....	Assistant professor.....	1,500	1,500
Physical education for men.....	Director.....	1,200	1,200
Physics.....	Professor.....	2,400	2,500
Romance languages and literature.....	Professor.....	2,400	2,500
	Assistant professor.....	.....	1,500
Dean of women.....	Dean.....	.....	2,200
University residences.....	Matron—Mansanita.....	1,272	.....
	Master—Lincoln.....	1,500	.....
Library.....	Librarian.....	2,400	2,400
University hospital.....	Matron.....	450	450
Buildings and grounds.....	Superintendent.....	1,800	1,800
	Head janitor.....	1,200	1,200
	Plumber.....	1,080	1,080
	Carpenter.....	900	900
	Fireman, heating plant.....	1,000	1,000
	Fireman, heating plant.....	.....	1,080
	Greenhouse man.....	900	900
	Night watchman.....	900	900
University farms.....	Foreman.....	1,800	.....
	Foreman.....	.....	1,200
Emeritus.....	.....	1,200	1,200
Do.....	.....	1,200	1,200

(c) *Annual salaries of employees, by departments—Continued.*

		1914-15	1915-16
PUBLIC SERVICE DIVISION.			
Nevada agricultural experiment station.	Director and entomologist.....	\$3,000	\$3,000
	Bacteriologist and veterinarian.....	2,000	2,400
	Assistant chemist.....	1,200	.....
	Chemist.....	2,400	2,500
	Meteorologist.....	2,400	2,500
	Agonomist.....	.....	.....
	Assistant bacteriologist and veterinarian.....	2,000	2,500
	Observer.....	1,000	800
	Officer in charge of range improvement, Agricultural experiment station.....	.....	2,500
	Assistant agronomist.....	1,000	1,200
	Librarian.....	300	300
	Stenographer.....	400	400
Smith-Lever agricultural extension.....	Assistant entomologist.....	1,200	1,200
	Director and boys' club leader.....	3,000	3,000
	Dairy husbandman.....	1,800	1,800
	Veterinarian.....	2,000	2,300
	Home economics.....	1,500	1,600
State veterinary control service.....	Director.....	800	800
	Veterinarian.....	.....	1,600
State hygienic laboratory.....	Director, bacteriologist.....	.....	3,000
	Director.....	2,400	.....
Pure food and drug control and weights and measures laboratory.	Commissioner.....	2,400	2,500
	Inspector.....	1,200	1,200
	Chemist.....	.....	900
	Chemist.....	900	.....
State mining laboratory.....	Director.....	.....	.....
	Analyst.....	.....	.....
	Analyst.....	.....	1,500
Tonopah school of mines.....	Principal.....	2,250	2,250
Engineering experimentation.....	Director.....	.....	.....

(S) The teaching forces in State universities and State colleges, in 1915-16.

Professors and instructors.			Maximum and minimum salaries.												House in addition to salary.			
			Deans.		Professors.		Associate professors.		Assistant professors.		Adjunct professors.		Instructors.				Assistants.		Tutors and others.
Men.	Women.	Total.	President's salary.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.
				Professors.	Deans.	Professors.	Associate professors.	Assistant professors.	Adjunct professors.	Instructors.	Assistants.	Tutors and others.						
Names of Institutions.																		
75	0	75	\$5,000	\$2,900		\$2,400	\$1,800	\$1,800	\$1,500	\$1,500	\$1,600		\$1,400	\$700	\$600	\$250		
65	0	65	6,500	3,200	\$2,400	2,500	1,800	1,800	1,800	1,700	1,600							
51	11	62	5,000	3,600		2,500	2,000	2,000	1,800	1,800	1,600			1,400	1,200	900	\$200	
88	23	111	4,000	3,000	2,500	2,300	1,700	1,600	1,200	1,500	1,400	1,200	\$1,000	1,400	500	1,200	500	
508	82	680	12,000	8,000	5,000	8,000	2,200	3,000	1,800	2,500	1,500			2,000	600	1,600		
204	37	241	6,000	4,000		3,000	1,800	1,800	1,600	1,800	1,400			1,200	1,000	900		
65	25	90	5,000	3,000		3,000	2,000	1,800	1,600	1,500	1,300			1,200	1,000	900		
25	0	25	5,000			3,500	1,500	2,500	1,500	1,400	1,200			1,200	900	450		
35	19	54	5,000	3,000	1,600	2,200	1,400	1,600	1,400	1,200				1,200	600	1,000		
28	6	34	4,500			2,500	1,600			1,400				1,200	900	450		
34	7	41	5,000	4,000	2,000	3,000	1,600			1,750	1,500			1,500	600	1,000		
43	0	43	4,200	2,400	2,100	2,200	1,800			1,700	1,300			1,600	720	300	140	
13	15	28	4,000	2,200		2,200	1,800			1,600	1,100			1,000	600	600		
75	0	75	6,000			3,200	2,000	1,800	1,800	1,500	1,200			1,000	1,200	1,000		
72	0	72	6,500	2,700	2,100	3,000	2,100	1,900	1,900	1,500	1,200			1,100	850	600	100	
13	1	14	2,500			1,800	1,500	1,200		1,500				1,000				
18	7	25	5,000			3,500	2,000	1,200		1,800	1,300			1,000		480	75	
67	12	79	6,000	2,900	1,800	3,500	2,000	1,200		1,800	1,800			1,800	450	480		
590	52	642	12,000	7,000	5,500	5,500	2,000	3,000	1,800	2,250	1,500			2,200	1,000	400		
220	33	253	7,500	5,000	3,300	3,400	2,200	2,000	1,800	1,900	1,200			2,200	1,000	2,750		
203	13	216	6,000	4,000		3,000	2,000	2,500	1,400	2,000	1,300			1,800	700	800	50	200
284	68	352	7,000	4,800	2,750	3,500	2,250	2,500	1,400	2,700	1,300			1,500	800	900	700	
44	54	98	6,000			2,400	1,300			1,400	1,000			1,400	800	450		
180	22	202	7,500	5,000	1,100	4,000	2,600	1,250	2,500	1,500	800			2,300	500	960	50	
176	39	215	6,000	4,000	3,500	3,500	2,200	2,200	1,700	1,700	1,200			1,900	900	700	300	
216	42	258	6,500	4,000	2,750	3,000	1,850	2,400	1,400	2,000	1,200			1,700	900	2,200	800	2,600
91	9	100	5,000	4,000	2,000	2,250	1,800	1,800	1,500	1,500	1,000			1,000	350	1,300	350	
97	24	121	5,000	4,000	2,200	2,500	1,600	1,900	1,900	2,000	1,200			1,200	600	300	108	

University of Maine.....	130	9	139	6,000	2,900	2,400	1,650	1,550	1,350	1,200	1,400	800	500	400	Yes.	0
Maryland State College of Agriculture.....	35	0	35	1,400	1,800	1,800	1,700	1,500			1,200	750	540		No.	0
Massachusetts Agricultural College.....	71	1	72	5,000	4,200	3,800	3,000	2,500	2,000	1,400	1,500	1,100	1,080	840	Yes.	0
Massachusetts Institute of Technology.....	267	2	268													
University of Michigan.....	481	22	503	10,000	5,000	2,500	4,000	2,000	3,000	2,000	1,700	900	900		No.	0
Michigan Agricultural College.....	125	22	127	8,500	3,800	2,500	3,000	1,500	2,800	2,000	1,250	850	850	200	No.	8
Michigan College of Mines.....	325	0	325	10,000	3,000	2,500	3,000	2,250	1,000	1,700	1,500	900	900		No.	0
University of Minnesota.....	442	64	508	10,000	7,500	2,800	6,000	2,100	3,000	1,000	2,500	1,000	1,000		No.	0
Mississippi Agricultural and Mechanical College.....	83	1	84	3,500	2,500	2,000	2,500	2,000	1,500	1,200	1,400	600	240	90	Yes.	0
Mississippi Industrial Institute and College.....	7	55	62	3,500			1,800	720			600				Yes.	0
University of Mississippi.....	35	6	41	3,500	2,750	2,000	2,000	1,680	2,000	1,100	1,500	1,000	300	100	Yes.	13
University of Missouri.....	212	14	228	4,000	4,500	3,600	3,000	2,400	2,400	1,800	2,200	1,200	200	200	Yes.	2
Montana College of Agriculture and Mechanic Arts.....	51	15	66	4,500	3,200		3,000	2,000			1,500	1,000	750	500	No.	0
Montana State School of Mines.....	8	0	8	4,000			3,000	2,000			2,000				No.	0
University of Montana.....	49	11	60	3,750	3,000	1,200	2,500	1,800			1,600	900	900	500	No.	0
University of Nebraska.....	205	62	267	6,000	3,500	2,200	2,500	1,800	2,000	1,800	800	250	400	50	No.	0
University of Nevada.....	25	8	33	6,000	3,000	2,000	2,500	2,500	2,200	1,800	1,800	600	100	300	Yes.	0
New Hampshire College of Agriculture and Mechanic Arts.....	50	3	53	5,000	2,500	2,000	2,500	1,800	1,800	1,700	1,400	1,000	1,000	600	Yes.	0
Rutgers College (N. J.).....	70	8	78	6,000			3,400	2,000	2,000	1,800	1,500	1,200	1,000	600	Yes.	0
University of New Mexico.....	16	5	21	4,500	2,100		2,100	1,600	1,700	1,400	900			200	No.	0
New Mexico College of Mines.....	6	0	6	2,000			1,800	1,100							No.	0
New Mexico College of Agriculture and Mechanic Arts.....	39	6	45	4,500	2,500	2,200	2,100	1,200	1,000			190	1,200	600	No.	0
New York State College for Teachers.....	53	20	73	5,000	3,500	1,400	3,500	2,500			2,400	1,200	1,100	800	Yes.	0
Cornell University (N. Y.).....	782	38	820	10,000	5,000	3,500	6,000	2,500			2,500	1,200	800	50	Yes.	2
New York State College of Forestry (at Syracuse University).....	21	0	21	5,000			3,000	2,500			2,000	1,000	750	300	No.	0
University of North Carolina.....	76	1	76	4,000	2,500	2,500	2,500	2,000	1,600	1,350	1,250	400	400	50	Yes.	0
North Carolina College of Agriculture and Mechanic Arts.....	59	1	60	4,500	2,750		2,800	1,950	1,800	1,700	1,400	500			No.	1
North Dakota Agricultural College.....	52	21	73	6,000	3,700	3,000	3,000	1,900	1,900	2,100	1,400	550	550	150	No.	0
University of North Dakota.....	58	15	73	6,000	3,200	3,000	3,000	2,000	2,000	1,400	1,400	1,250	1,250	100	Yes.	0
Ohio University.....	52	36	89	6,000	3,000	2,000	2,100	1,600	1,500	1,300	1,000	650	650	200	Yes.	0
Ohio State University.....	438	43	481	7,000	3,000	2,000	2,500	1,900	1,900	1,500	1,300	1,000	700	200	Yes.	0
Miami University (Ohio).....	44	11	55	5,000	3,000	2,000	2,500	2,000	1,900	1,500	1,000	600	600	400	Yes.	0
Oklahoma College for Women.....																
University of Oklahoma.....	130	12	142	7,500	4,000	2,100	2,500	1,800	2,100	1,800	1,400	900	900	700	Yes.	0
Oklahoma Agricultural and Mechanical College.....	78	20	98	5,000	2,800	2,400	2,500	2,000	2,000	1,600	1,700	1,000	900	600	No.	0
Oklahoma State School of Mines and Metallurgy.....	6	0	6	2,700			1,600	1,400	1,200						Yes.	0
Oregon State Agricultural College.....	124	38	162	7,000	3,100	2,400	3,000	1,700	2,500	1,500	2,000	600	500	450	No.	1
University of Oregon.....	99	13	118	5,000	3,000	2,500	1,600	1,600	1,600	1,200	1,200	1,200	1,200	100	Yes.	0
Pennsylvania State College.....	251	28	279	9,000	5,000	1,500	2,750	1,800	2,350	1,200	2,500	850	1,200	600	Yes.	5

: No report.

(1b) *The teaching force in State universities and State colleges—Continued.*

Names of institutions.	Maximum and minimum salaries.																			Tutors and others.		House in addition to salary.	
	Professors and instructors.				Deans.				Professors.		Associate professors.		Assistant professors.		Adjunct professors.		Instructors.		Assistants.		Maximum.		Minimum.
	Men.	Women.	Total.		Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.	Maximum.	Minimum.				Maximum.	President.	Professors.
University of Porto Rico.	37		67		\$3,000	\$3,000	\$2,000	\$1,800		\$1,700	\$1,500		\$1,400	\$450		\$350	\$350					No.	2
Rhode Island State College.	28		34		\$1,500	\$1,500	2,400	1,800		1,600	1,600		1,500	800		400	400					No.	0
The Citadel, The Military College of South Carolina.	14		14		3,000		2,000	1,700		1,200												Yes	2
Clemson Agricultural College (S. C.)	71	0	71	4,500	3,000	2,500	2,500	1,900	1,700	1,500	1,500		1,200	900		1,200	900					Yes	19
University of South Carolina	36	3	39	5,000	2,500	2,000	3,000	2,000	1,500	1,500		\$1,200	\$1,200	800		500	400					Yes	0
South Dakota State College of Agriculture and Mechanic Arts.	63	9	72	3,500	3,000	3,000	3,000	2,000	2,100	1,600	1,600			700		1,500	500					Yes	0
South Dakota State School of Mines.	12	1	13	2,800				1,900	1,550													Yes	0
University of South Dakota	38	14	52	5,000	2,750	2,250	2,350	1,600		1,550	1,250		1,300	600		450	150					No.	0
University of Tennessee	178	12	190	5,200	2,800	1,600	2,200	1,800	1,800	1,600	1,200		2,200	400		600	25					Yes	1
University of Texas	169	27	196	6,000	4,000	3,250	3,250	2,500	2,500	2,000	1,700		2,000	900		400	120					Yes	0
Agricultural and Mechanical College of Texas.	102	0	102	6,000	3,300	3,300	3,000	1,800	2,000	1,650	1,700		1,200	1,000		1,000	200					Yes	0
College of Industrial Arts (Tex.)	10	46	56	4,500	2,400	1,800	2,000	1,600					1,500	1,000		100	100					Yes	0
Agricultural College of Utah.	87	21	108	5,500	3,600	2,300	2,500	1,800	2,100	1,800	1,300		1,400	800		600	200					Yes	2
University of Vermont and State Agricultural College.	104	2	106	7,000	3,000	1,700	3,000	1,200	1,600	2,000	500		1,500	250		650	100					No.	0
Virginia Polytechnic Institute.	55	0	55	5,000	2,600	2,200	2,000	1,800	1,800	1,200			1,700	600		500	250					Yes	24
University of Virginia.	122	8	130	8,000				3,600	2,500				2,500	1,000		900	500					Yes	9
Virginia Military Institute.	25	0	25	4,500				2,500	2,300				2,200	800		1,000	135					Yes	0
College of William and Mary (Va.)	18	0	18	2,750	2,000			1,800	2,000	1,500	1,400		1,500	1,000		900	700					Yes	0
State College of Washington.	115	13	128	6,000	3,000	2,400	3,000	2,100	2,300	2,000	1,350		1,800	1,000		1,000	450					Yes	0
University of Washington.	184	33	217	10,000	3,000	2,000	3,000	2,000	1,800	1,600	1,500		1,200	900		1,000	500					Yes	0
West Virginia University.	99	9	108	4,800	3,000	2,700	3,000	2,200	2,000	1,800	1,750		2,000	1,000		1,000	400					Yes	4
University of Wisconsin.	431	64	495	7,000	6,000	3,250	4,500	2,850	3,000	2,250	1,750		2,000	1,000		980	500					Yes	4
University of Wyoming.	52	5	57	5,000	3,000			2,400	2,000	1,800	1,400		1,300	500		100	100					Yes	0

F. ANALYSIS OF COSTS.

(See Ch. IX.)

Total operating expenses,
\$174,157.56.

1915-16.
UNIVERSITY OF NE-
VADA. TOTAL EXPEN-
DITURES, \$284,533.80.

General operating expenses,
\$62,106.14.

Food and drug control..... \$5,477.79
State analytical laboratory..... 2,985.63
State hygienic laboratory..... 5,685.51
Veterinary control..... 1,604.11
Engineering experimentation..... 3,099.77
Live stock commission..... 12,898.74
Tonopah school of mines..... 2,542.98
Educational survey..... 749.45
Agricultural experiment station..... 31,920.85
Agricultural extension..... 11,863.88
79,740.56

(Extension and industrial service
work, \$79,740.56.)

Salaries.....	\$15,950.83	Labor, equip- ment, and supplies.
Administration.....	1,800.00	
Buildings and grounds.....	900.00	
Greenhouse.....	390.00	
Hospital.....	3,022.65	
Library.....		\$1,401.52
Traveling expense.....		2,305.98
Printing and sta- tionery.....		287.04
Telephone, tele- graph, and post- age.....		251.25
Commencement.....		616.94
Advertising.....		14,694.55
Janitors and labor.....		4,413.84
Repairs.....		3,459.78
Furniture and fix- tures.....		3,793.96
Power, light, and water.....		1,811.17
Supplies.....		5,164.56
Fuel.....		2,131.38
Miscellaneous.....		22,033.47
		40,072.67



(c) *Building costs.*

SPACE USED IN COMMON.

Buildings.	Square feet.	Cost.	Cost per square foot.
Museum (in Mackay school of mines).....	2,810	\$22,255.00	
Library.....	4,938	10,000.00	
Ladies' rest room.....	810	1,017.50	
Men's rest room.....	152	347.46	
Administration.....	2,336	5,482.20	
Gymnasium.....	7,335	2,000.00	
Total.....	18,181	41,102.16	\$2.28

INSTRUCTIONAL SPACE.

Mining (Mackay school).....	8,758	\$70,474.00	
Electrical engineering.....	7,158	40,000.00	
Mechanical engineering.....	8,661	11,498.00	
Physics.....	6,837	7,000.00	
Chemistry.....	6,023	12,000.00	
Stewart Hall.....	10,302	17,482.50	
Morrill Hall.....	7,405	17,384.59	
Dafry.....	5,098	4,800.00	
Hatch.....	605	8,000.00	
Total.....	56,847	188,589.09	\$3.31
Grand total.....	75,028	229,691.25	3.06

G. PHYSICAL EDUCATION.

The committee has been impressed with the need of additional attention to the whole problem of health and body training. At present the university has a compulsory course in physical training for women and in military training for men. Both of these departments are well conducted, considering the equipment available. The military department will receive an additional Federal officer and much new equipment under the provision of the new national defense laws. Military drill is a valuable form of mental and physical education. When the revised course is organized the department will be even better equipped to offer such training. Even with the best system of military training, however, the committee believes that the men should have further physical training and instruction in hygiene. At present military drill is required four times a week. As soon as it is possible to establish a department of physical education for men the number of drill periods may be reduced to three per week and two hours' additional work may be required in hygiene, corrective gymnastics, and recreational games. Arrangements should be made for conducting adequate physical examinations, and full authority should be granted the examining officers to exclude from the university physically unfit persons, especially those suffering from communicable diseases.

Additional facilities should be provided for recreational sports, such as tennis, handball, swimming, baseball, hockey, etc. Shower baths and sanitary lockers should be installed.

Habits of outdoor exercise and care of the health are among the most valuable lessons which can be learned by college men; too many students fail to obtain these benefits. The increased use of bleachers, and the corresponding decrease in participation in recreational sports among the student body at large, is a matter which has engaged the serious consideration of all university authorities. The conditions at the University of Nevada are not especially bad, but the great need here, as elsewhere, is for more educational supervision. To this end a larger portion of the

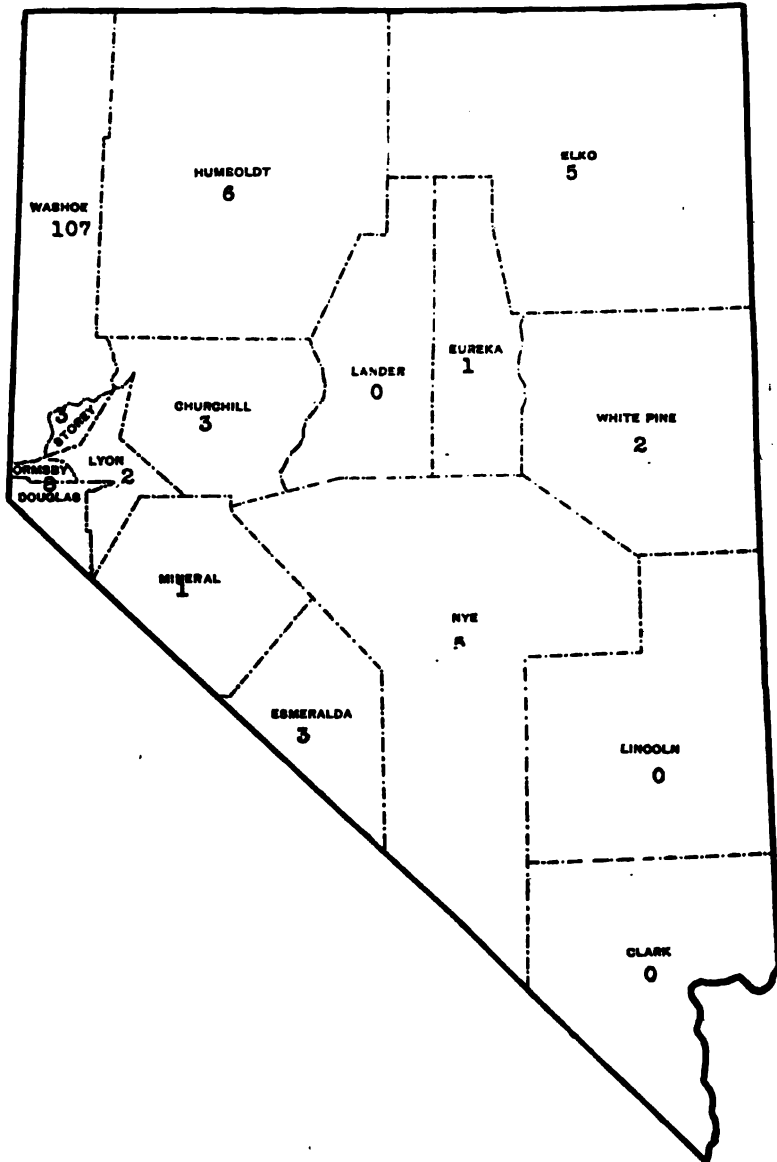
university budget should be devoted to an adequate rational plan of physical training for all students.

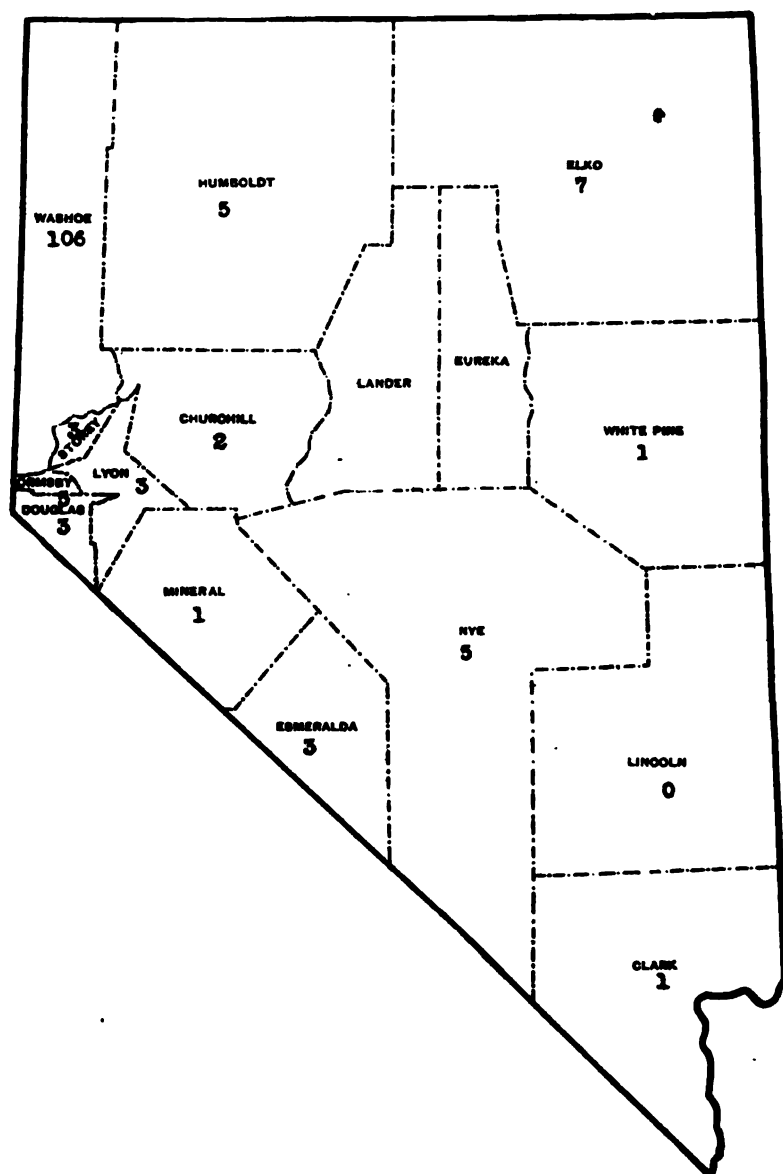
The university is fortunate in being able to avail itself of the services of the physician in charge of the State hygienic laboratory to conduct its physical examinations and to give instruction in hygiene. This officer, together with the director of physical education for men, the commandant of cadets, the director of physical training for women, and the dean of women might well be constituted an advisory faculty committee in physical education. Physical education is a phase of university instruction which the committee feels needs the organized attention of a sympathetic faculty group.

The college hospital suggests what might well be the beginning of a general infirmary system similar to but on a smaller scale than the excellent one which has been established at the University of California. Aside from its direct benefits, such an institution in a university is a helpful object lesson in teaching young people how and when to avail themselves of necessary medical and dental assistance.

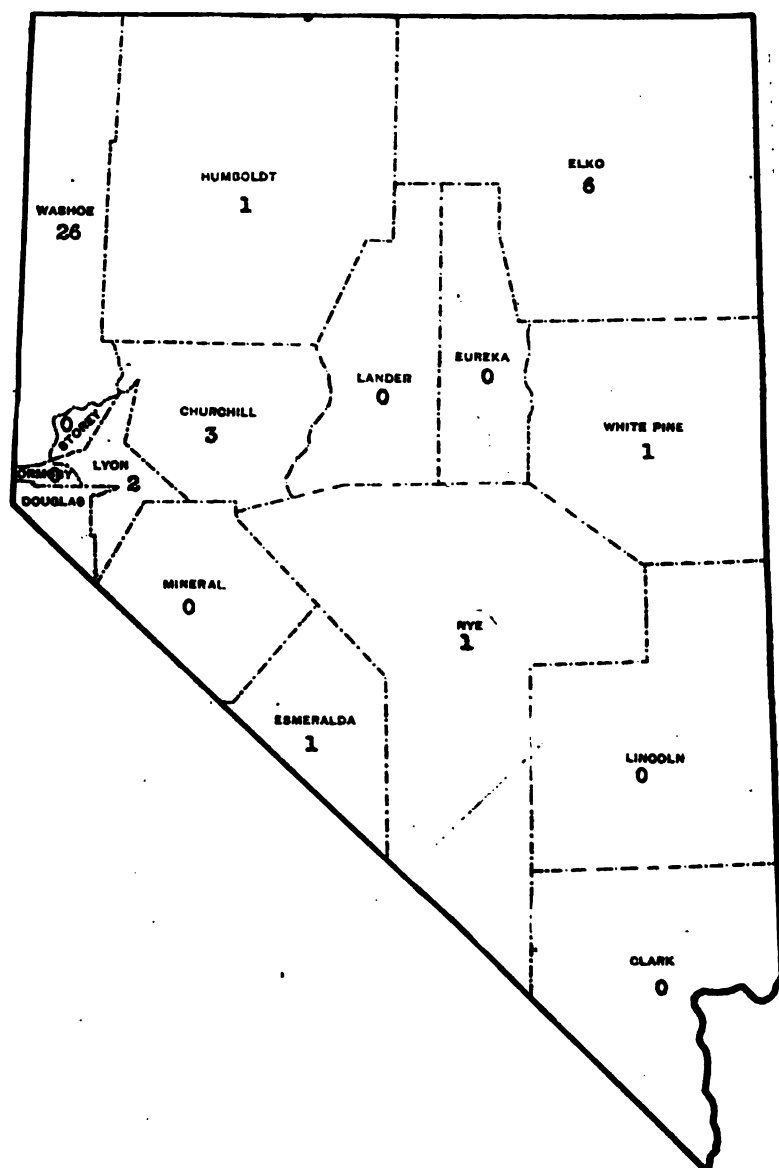
H. ADDITIONAL STUDENT DISTRIBUTION, FROM MAP.

(For Maps 1-5 see text of the report, especially Chapter V.)

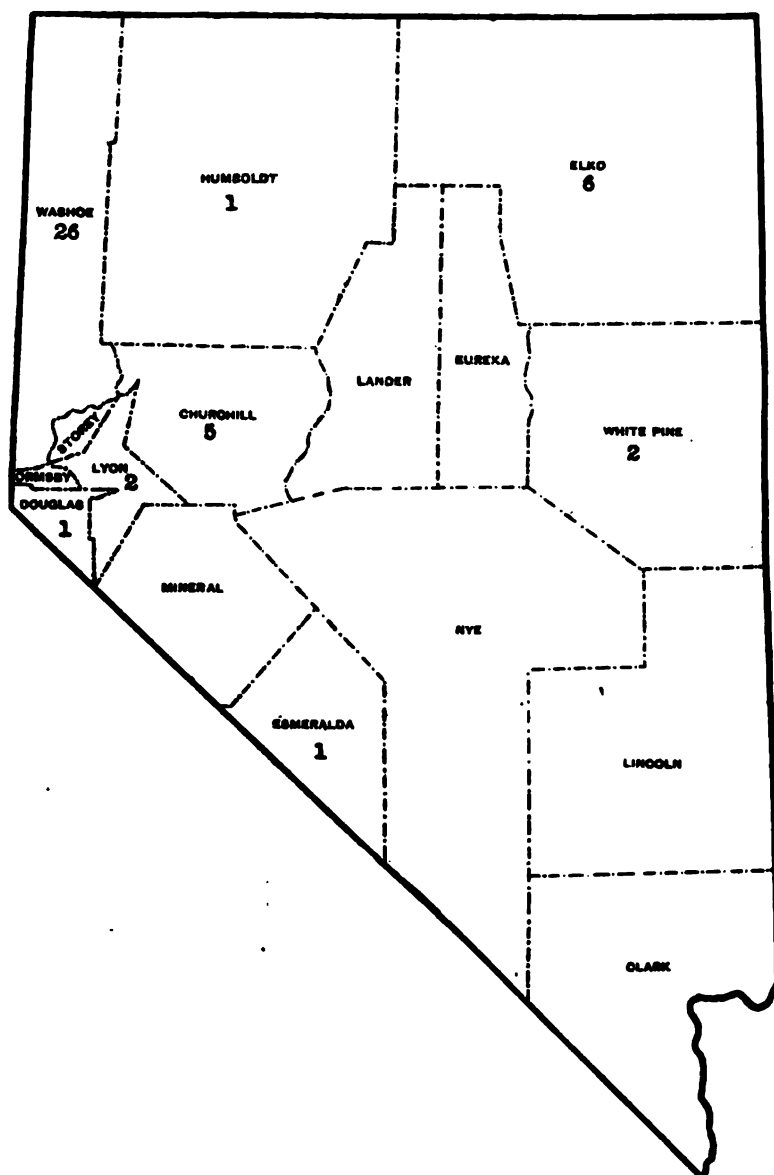
**MAP 6.**—Distribution of students from Nevada, by counties of residence, enrolled in arts and sciences during first semester, 1915-16.



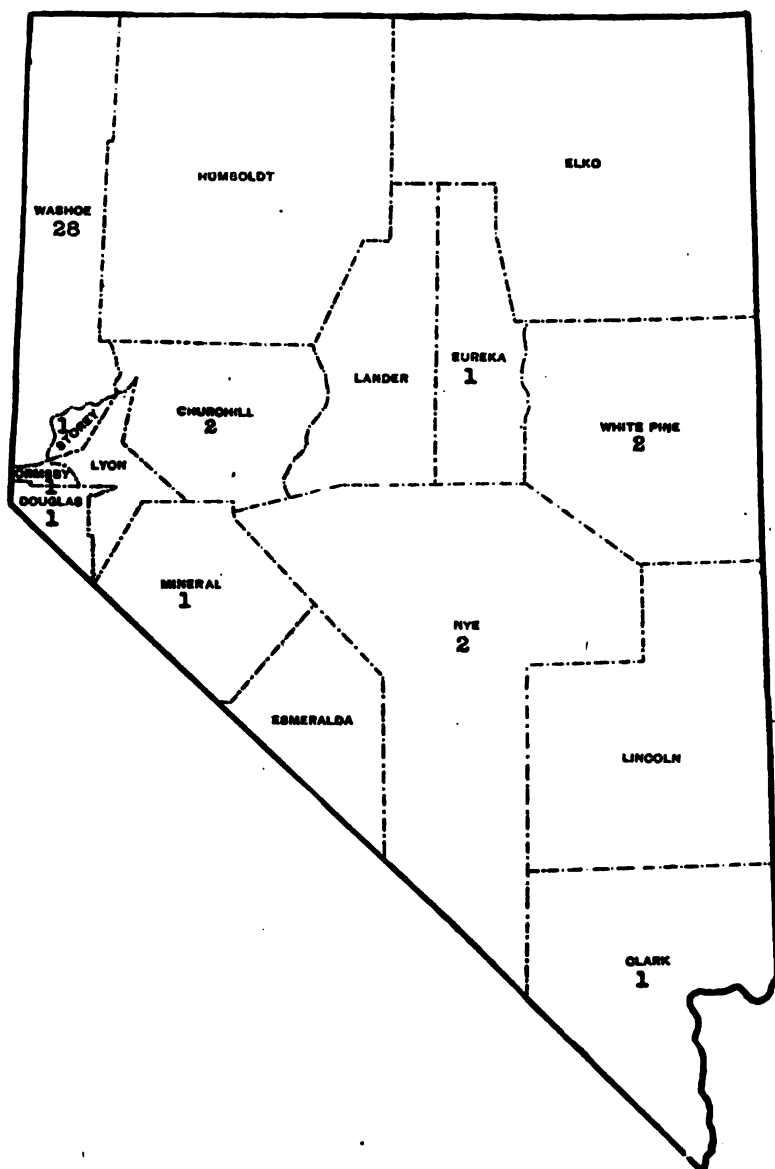
MAP 7.—Distribution of students from Nevada, by counties of residence, enrolled in arts and sciences during second semester, 1915-16.



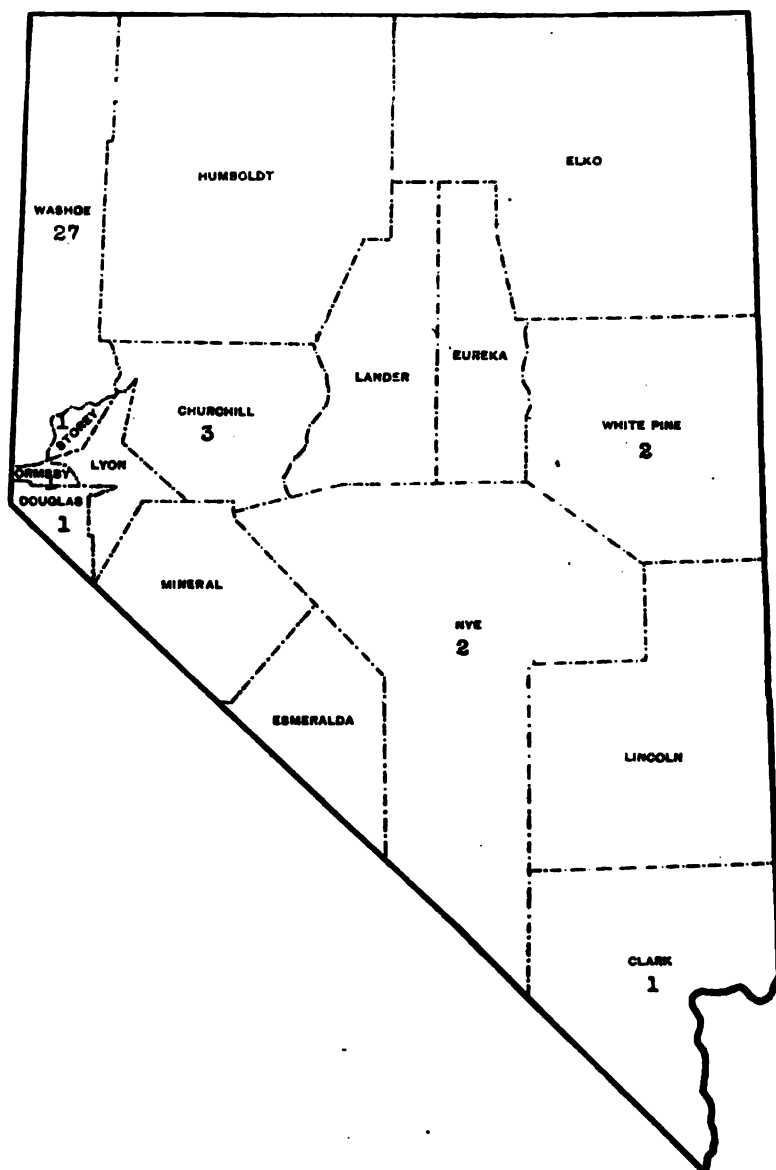
MAP 2.—Distribution of students from Nevada, by counties of residence, enrolled in agriculture during first semester, 1915-16.



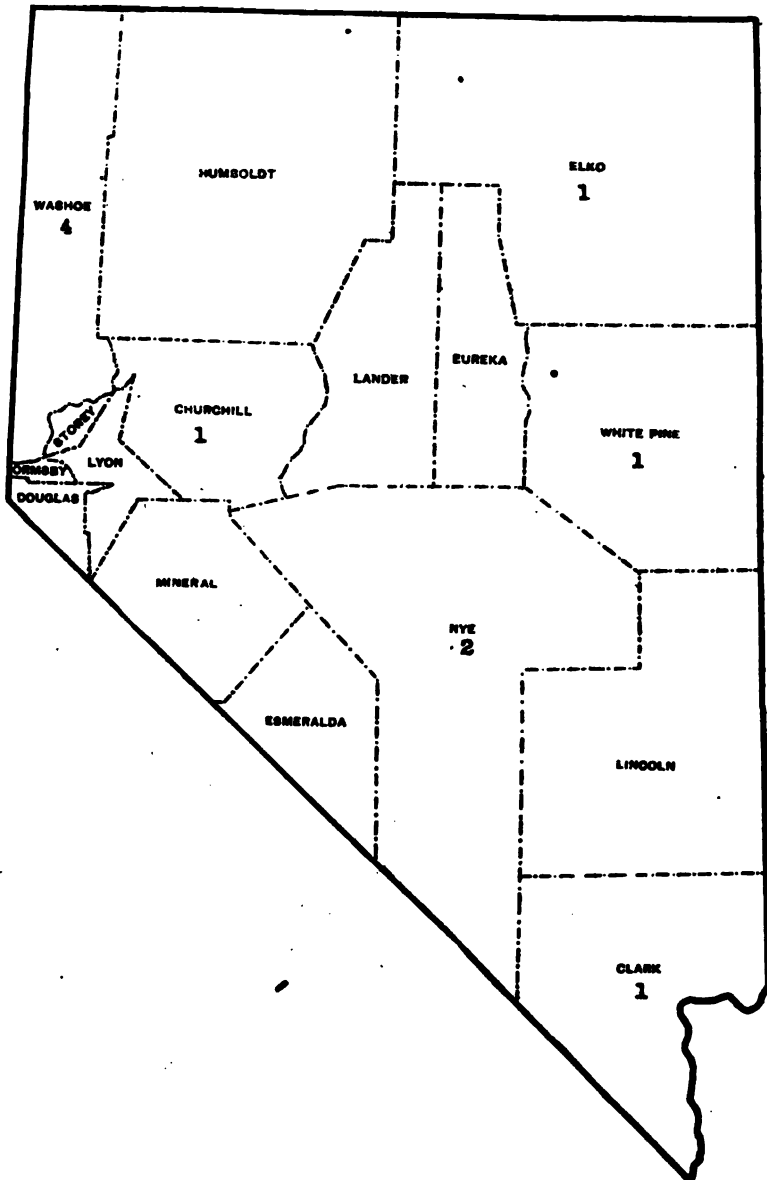
MAP 9.—Distribution of students from Nevada, by counties of residence, enrolled in agriculture during second semester, 1915-16.



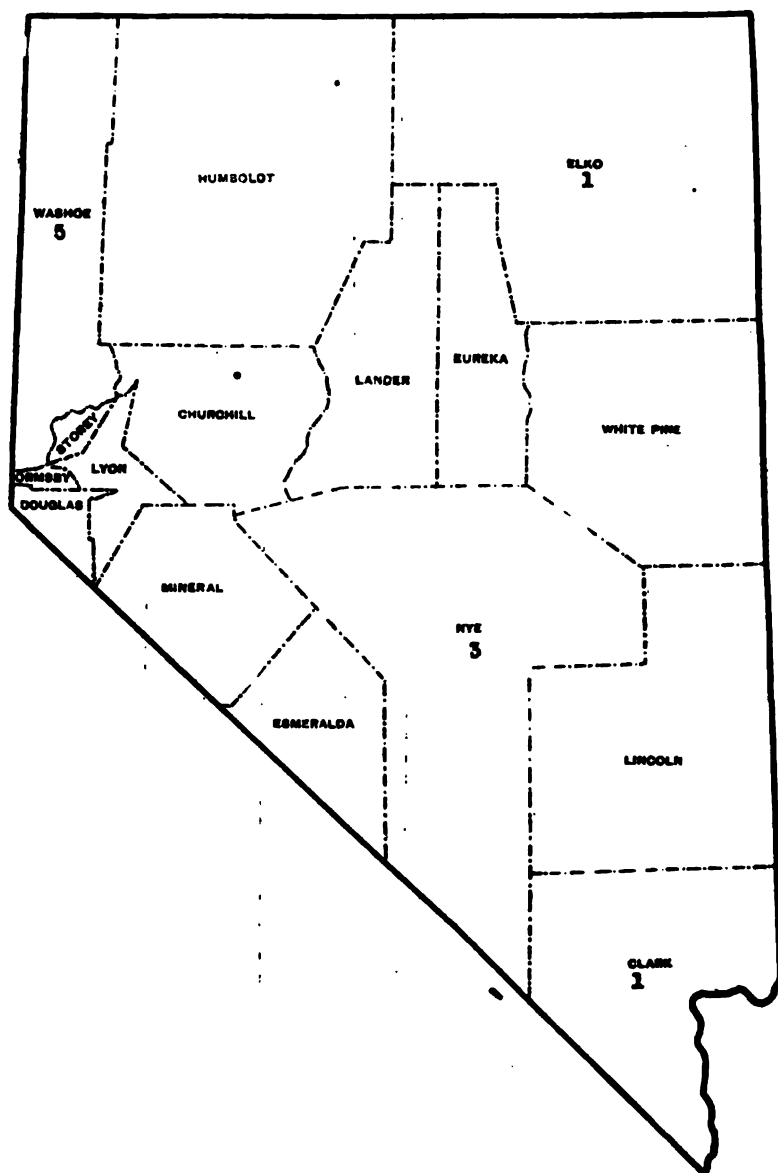
MAP 10.—Distribution of students from Nevada, by counties of residence, enrolled in engineering during first semester, 1915-16.



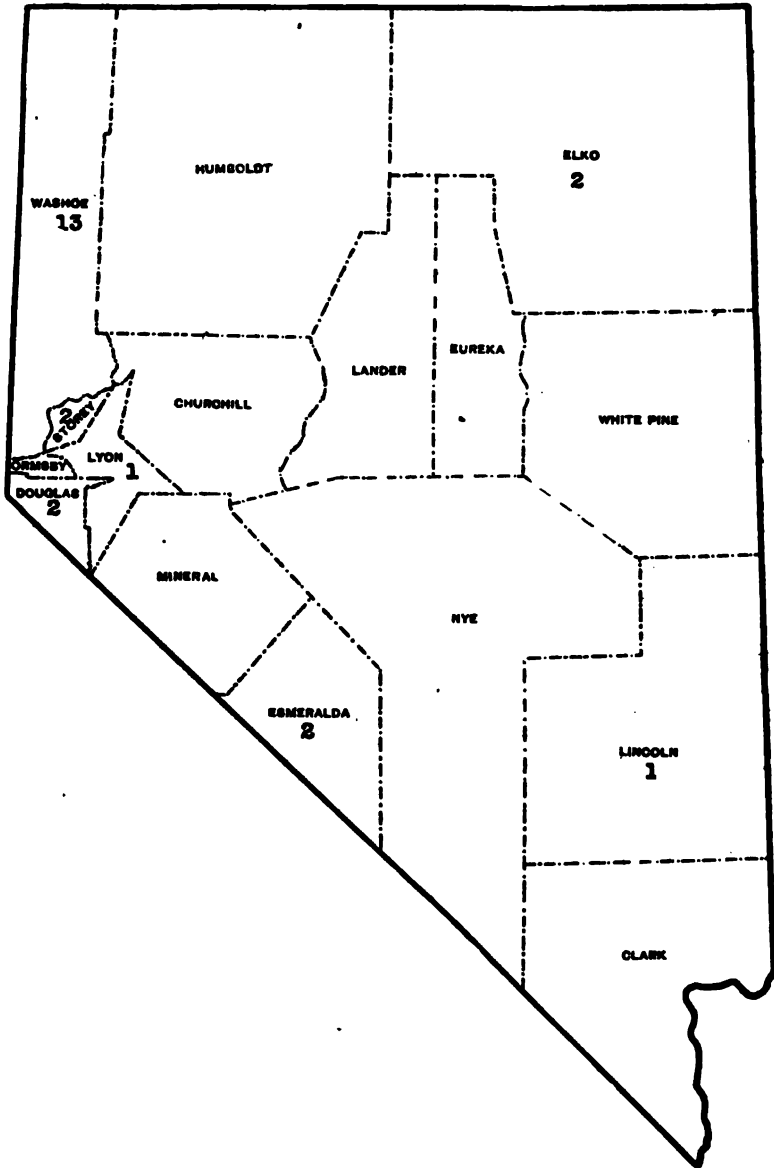
MAP 11.—Distribution of students from Nevada, by counties of residence, enrolled in engineering during second semester, 1915-16.



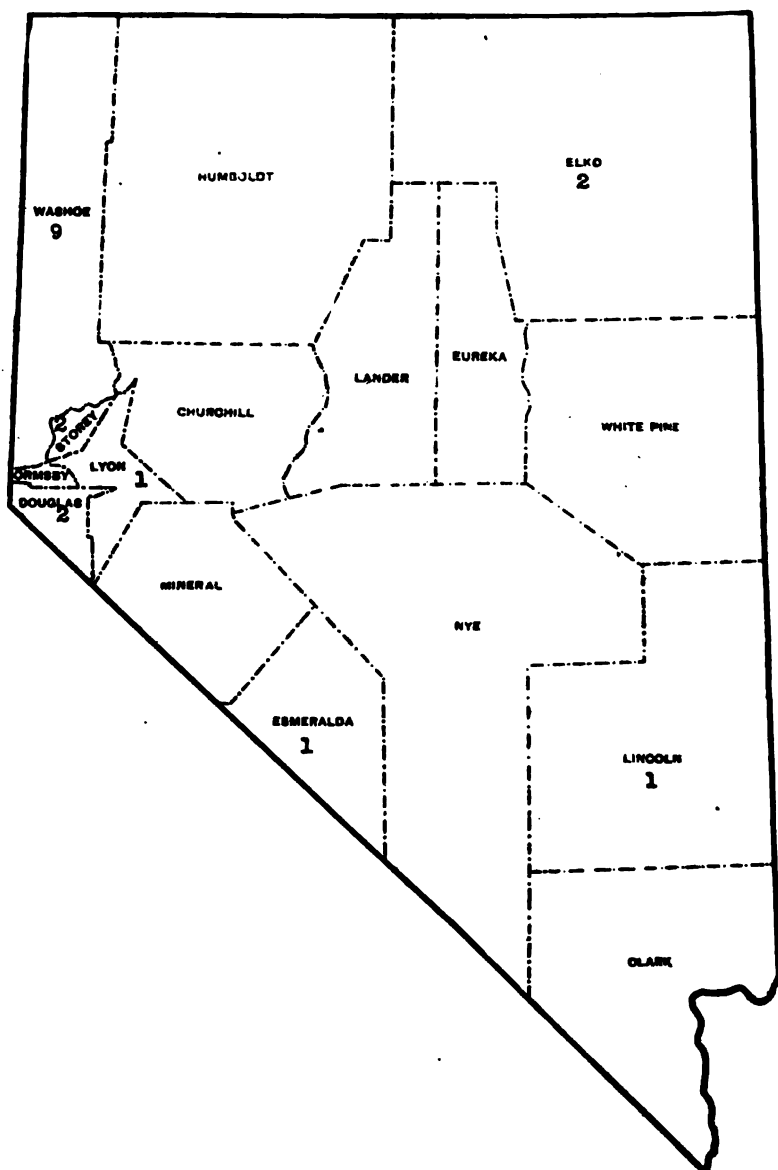
MAP 12.—Distribution of students from Nevada, by counties of residence, enrolled in mining engineering during first semester, 1915-16.



MAP 13.—Distribution of students from Nevada, by counties of residence, enrolled in mining engineering during second semester, 1915-16.



MAP 14.—Distribution of students from Nevada, by counties of residence, enrolled in normal during first semester, 1915-16.



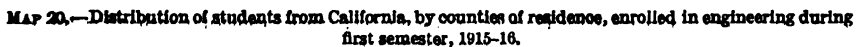
MAP 15.—Distribution of students from Nevada, by counties of residence, enrolled in normal during second semester, 1915-16.



MAY 17.—Distribution of students from California, by counties of residence, enrolled in arts and sciences during second semester, 1915-16.



MAP 18.—Distribution of students from California, by counties of residence, enrolled in agriculture during first semester, 1915-16.

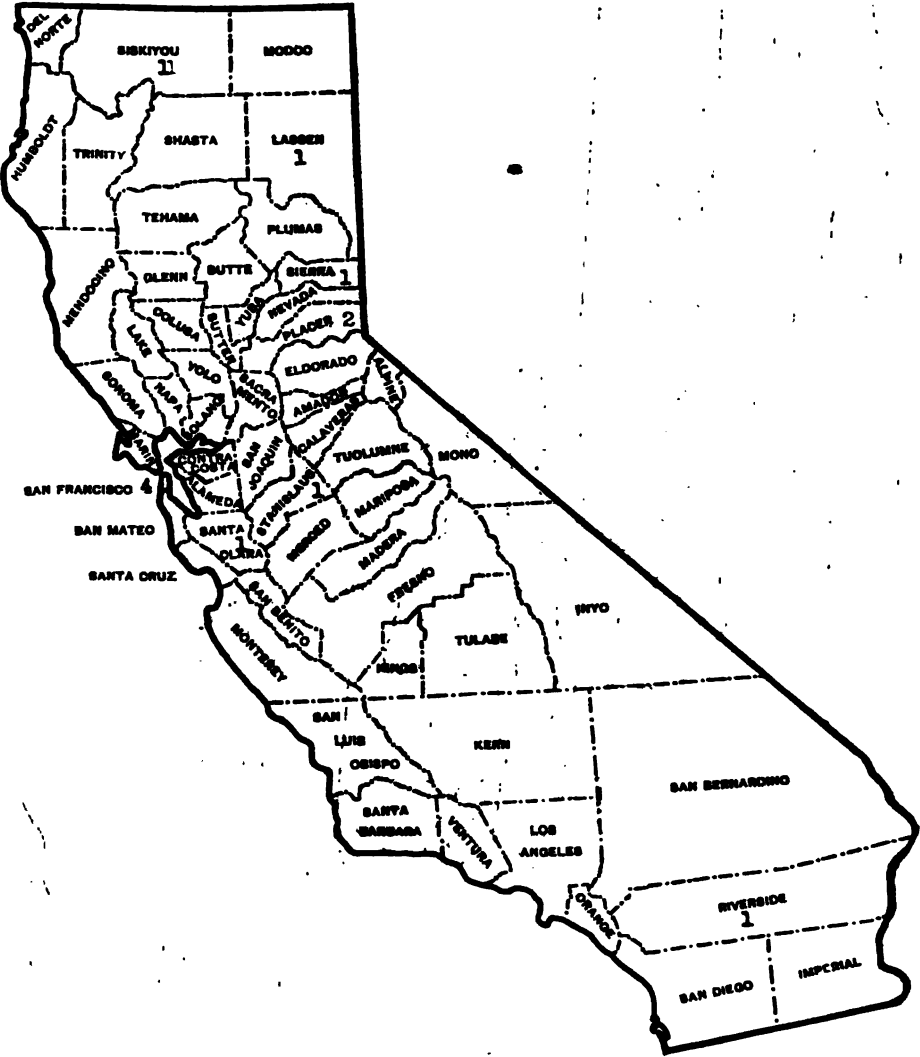




MAP 21.—Distribution of students from California, by counties of residence, enrolled in engineering during second semester, 1915-16.

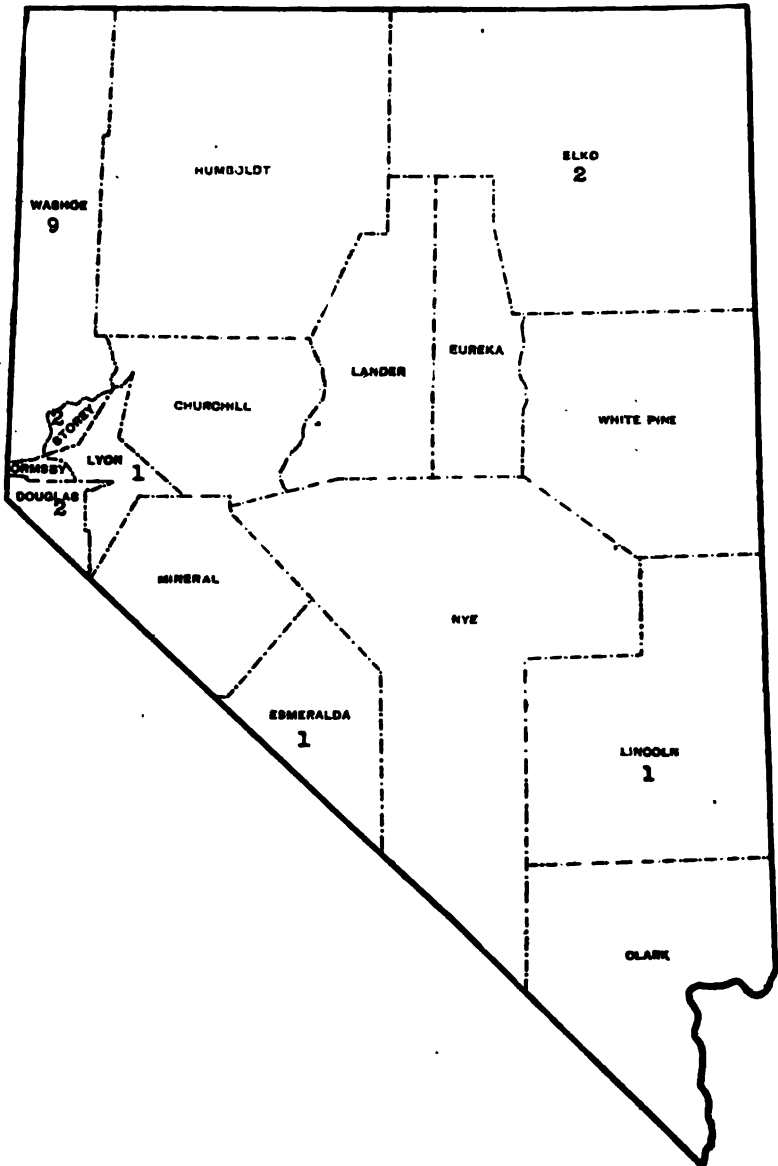


MAP 22.—Distribution of students from California, by counties of residence, enrolled in mining engineering during first semester, 1915-16.



MAP 23.—Distribution of students from California, by counties of residence, enrolled in mining engineering during second semester, 1915-16.





MAP 15.—Distribution of students from Nevada, by counties of residence, enrolled in normal during second semester, 1915-16.



MAP 16.—Distribution of students from California, by counties of residence, enrolled in arts and sciences during first semester, 1915-16.



MAR 18.—Distribution of students from California, by counties of residence, enrolled in agriculture during first semester, 1915-16.



MAP 20.—Distribution of students from California, by counties of residence, enrolled in engineering during first semester, 1915-16.



MAP 22.—Distribution of students from California, by counties of residence, enrolled in mining engineering during first semester, 1915-16.



MAR 23.—Distribution of students from California, by counties of residence, enrolled in mining engineering during second semester, 1915-16.



MAP 24.—Distribution of students from California, by counties of residence, enrolled in normal during first semester, 1915-16.

DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1917, No. 20

WORK OF SCHOOL CHILDREN DURING
OUT-OF-SCHOOL HOURS

BY

C. D. JARVIS



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1917

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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, April 16, 1917.

SIR: The conditions facing the people of the United States because of the entrance of this country into the world war have greatly stimulated general interest in the work of school children during out-of-school hours and in the plans which this bureau has devised for such work as will be useful both economically and educationally for the millions of school children between the ages of 9 or 10 and 14 or 15. This increase of general interest in this subject makes timely the publication of the manuscript submitted herewith, and I recommend that it be published as a bulletin of the Bureau of Education.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.



WORK OF SCHOOL CHILDREN DURING OUT-OF-SCHOOL HOURS.

INTRODUCTION.

The investigation reported in this bulletin was undertaken for the purpose of making available a volume of evidence on questions concerning the early elimination of children during out-of-school hours. The inquiry was confined to the children of the sixth, seventh, and eighth grades. Information concerning the following points has been collected and is here presented:

1. The proportion of school children who work during out-of-school hours.
2. The amount and money value of the work.
3. The nature of the work performed.
4. How school children spend their leisure hours.
5. Why children leave school at an early age.
6. To what extent can gardening replace less desirable forms of employment.

The investigation covers the activities of 14,391 children—7,120 boys and 7,271 girls. The children are those of urban communities and distributed over 11 States, as follows:

States and children included in the investigation.

States.	Boys.	Girls.	Total.	States.	Boys.	Girls.	Total.
Alabama.....	182	209	391	Ohio.....	1,041	1,096	2,137
Arkansas.....	132	113	245	Pennsylvania.....	2,282	2,117	4,399
Connecticut.....	559	579	1,138	Utah.....	86	79	165
Delaware.....	21	38	59	Washington.....	28	44	72
Iowa.....	971	1,116	2,087	Total.....	7,120	7,271	14,391
Michigan.....	1,561	1,572	3,133				
Missouri.....	257	308	565				

The initial step consisted in sending a copy of an investigation sheet to the principals of approximately 2,500 schools. With the inquiry sheet was inclosed a letter soliciting the cooperation of the principal and a postal card for the reply. At the same time a letter was sent to the superintendents concerned, inclosing a copy of the letter sent to principals. As a result 317 principals volunteered to obtain the desired information in their respective schools. To each of these was forwarded the number of investigation sheets requested, and with each lot was sent a brief letter of explanation and a return frank envelope.

EMPLOYMENT OF SCHOOL CHILDREN.

Of the total number of children investigated, 5,181, or 36 per cent, are employed during summer vacation, and 3,864, or 27 per cent, are employed during out-of-school hours throughout the school year. (See Table 1, p. 26.) The amount of employment varies greatly. During summer vacation some children work only a few days or weeks, while others put in full time, and the earnings range from \$1 to \$150. During the school year, likewise, the amount of work varies from a few odd jobs to fairly regular employment both before and after school and sometimes at noon.

It is interesting to note the total income and the average income from such employment, and it should be remembered that these are children of the sixth, seventh, and eighth grades only. Those who were employed during summer vacation earned \$68,342.04. Assuming that the same proportion of children in these grades throughout the United States earn as much, the annual income from their employment amounts to approximately \$60,000,000. The average earnings of the children amount to \$13.19, but 362 children, or 7 per cent, averaged \$69.01. The average weekly earnings of those who work during out-of-school hours amount to \$1.51. Many children earn remarkably large amounts; 117, or 3 per cent, earned an average of \$6.27 per week. One boy earns \$25 per week in running a paper business.

Michigan, Ohio, and Iowa show the largest proportion of summer workers. These are conspicuous agricultural States, and many schoolboys work in the country during the summer. Utah also shows a high percentage, but the number of children investigated is not sufficient to warrant conclusions. None of the other States exceeds the average. Michigan shows a high proportion of workers and a low average income. Washington, Missouri, and Alabama show the largest proportion of high incomes—\$50 or over.

From the standpoint of weekly earnings while school is in session, Alabama, Missouri, and Washington show the highest average earnings. Since the number of children investigated from these States is small, the average income is likely to be affected by a few high individual records. For example, a boy in Alabama runs a large paper business from which he makes \$25 per week. Another earns \$12 per week. If these two conspicuous records were eliminated the average earnings would be conspicuously reduced. Of those States having large numbers represented, Pennsylvania and Iowa show the highest weekly earnings.

NATURE OF CHILDREN'S EMPLOYMENT.

In Table 2 (p. 26) will be found a classification of the various kinds of employment in which school children are engaged during out-of-school hours, including summer vacation. Information has been obtained with regard to the nature of the employment of 4,526 children. The table requires no explanation. In most States the law forbids the employment of children under a minimum age, which is usually 14. Few States, however, have laws preventing children from entering into any kind of legitimate business on their own responsibility. Boys and girls may engage in the selling of papers, which requires their time in early morning and late at night, but so long as they attend school no one seems to object. It is argued that children often become so fatigued by this work that they can not keep up with their school studies, and that as a result they are frequently dwarfed in mind as well as in body. It has also been said that children who engage in money-earning employment while attending school are more likely to become discouraged from their inability to keep up with their studies. This, coupled with the consciousness that they can earn a living, causes a good many to leave school earlier than they otherwise would.

These are sound arguments and justify the efforts of the welfare workers in their recent attempts to solve this problem. There is, however, another side to the argument. In many cases parents are able to keep their children in school only as a result of the latter's earnings. Furthermore, it should be remembered that the evils attending idleness may greatly exceed those attending most kinds of employment during out-of-school hours. Much of such employment is voluntary on the part of the children, and supplies an opportunity to satisfy the restless spirit of youth. While few of the common forms of children's employment have any technical educational value, wholesome work has some value in itself. All children should learn to work and should learn the value of money as expressed by toil. In order to understand the problem it is desirable to consider the various occupations individually. It is well in such a study to keep in mind the following points:

- (a) Time and energy required;
- (b) Environmental conditions;
- (c) Educational or vocational value.

1. *Farm work.*—The various kinds of farm work attract many children, both boys and girls. It is an occupation for summer vacation rather than for employment in the mornings and evenings while school is in session. Of the total number of workers, nearly 33 per cent of the boys and 26 per cent of the girls performed farm work for pay. The nature of the work varies and includes picking fruit,

weeding, hoeing, and cultivating crops, and caring for poultry, horses, or other live stock. The work of the girls consists largely of picking fruit and working in gardens, although a few care for poultry. Where boys hire out to farmers the hours of labor are sometimes long, but as a rule children are not overworked on the farm. Some of the work, such as hoeing and weeding, may be fatiguing if persisted in many hours at a time, but much of the farm work done by children is in the form of odd jobs, chores, and piecework, like picking berries, which is not necessarily irksome.

The environmental conditions are usually of the best. The children work mostly in the fresh air, and those who move to the farm for the summer get a good supply of wholesome food and return to the city much stronger from their experience. Many of the children are engaged by their parents to perform various kinds of garden work at home. Such conditions are most favorable from an environmental standpoint.

From the standpoint of educational opportunities farm work ranks high. Children gain skill from working with the hands, and such varied experiences as are offered on the farm furnish abundant opportunity for an all-round development of the senses. They also have a good opportunity to observe some of the wonderful workings of nature, a knowledge of which should make people broader, better, and more contented. From the vocational standpoint, also, children engaged in farm work are able to learn many things that may be of use to them in later life. Ability to grow plants is valuable from both the vocational and avocational standpoints.

2. *Housework*.—Over 50 per cent of the working schoolgirls, according to the table, are engaged in housework, either at home or for some other family. Nearly half of these are working for some one other than their parents. The character of the work in each case is about the same, although environmental conditions may differ. No one should doubt that girls should assist in home duties, and if their help is not needed at home and if conditions are favorable there should be no serious objection to girls assisting in other homes. There are types of work, of course, such as washing and scrubbing, that should not be given to young girls. A large proportion of those who work away from home are engaged in the care of younger children, an occupation very suitable to girls, and one in which most girls take pleasure.

The hours of service, either at home or away from home, usually are not objectionably long, although there are doubtless many cases where the time should be shortened. The environmental conditions, with few exceptions, are favorable. Children at home and those employed as nurse girls usually have abundant opportunity for recreation in the open air. Some others are not so favorably em-

ployed. Home activities should offer good training facilities, and most girls are better for the experience.

3. *Work in factories, mills, and mines.*—In view of the strict laws regarding the employment of children, only a small proportion—less than 2 per cent—are engaged in factories, mills, and mines. Only 11 are known to work in mills and 3 in mines. Canning factories claim a large proportion of those listed in this group. Most of the factory work done by children is done during summer vacation. From the standpoint of time and energy required, there is little objection to this kind of work, for most of it is on a piece-work basis, and the children, except those of indiscreet parents, can stop whenever they like. From the environmental and educational standpoints there is nothing to commend this kind of employment for children of school age.

4. *Work in stores.*—About 9 per cent of the boys and over 3 per cent of the girls work in stores. Much of such employment represents Saturday work and consists largely of wrapping parcels, running errands, and odd jobs. A few children serve as clerks behind the counter. During summer vacation some girls act as “cash girls” and “wrappers.” Many children accept such positions during the summer, and when the offer of a permanent position comes they can not resist the allurements of the department store. This, coupled with the opportunity to earn money and to obtain many of the things that money will buy, is responsible for the early withdrawal of many children from school. The work, as a rule, is not heavy, but demands comparatively long hours, during which the children are on their feet most of the time. Many girls have experienced serious foot troubles as a result of such work. Boys are sometimes required to carry heavy loads for long distances, but on the whole the work is not undesirable. The surroundings are not objectionable, and children so employed have opportunities for learning much about business affairs that may be useful to them in many callings. Cash and wrapper girls commonly become saleswomen. The experience is usually worth while, even from the standpoint of vocational guidance. It should give children a chance to determine whether or not they are adapted to that kind of business or occupation—something they can not learn at school.

5. *Work in offices.*—There are few office positions open to children of the grammar grades, only a little over 1 per cent being thus employed. This sort of work is largely in the nature of “office boy” and “telephone girl.” The duties sometimes include the running of errands and in keeping the office in order. As a rule, the work is light and requires short hours. Although the duties sometimes furnish opportunities for observing business methods, such employment has little to commend it from the educational standpoint.

Some exceptional employers, of course, take an unusual interest in their office boys and encourage them to improve their time during slack moments, and it is not difficult to point to some successful business men who have obtained a large share of their training in this way. Cases of this are extremely rare, however.

6. *Helpers in industrial occupations.*—On account of the nature of the work, few children of the grammar grades are attracted by industrial occupations, only a little over 2 per cent being thus employed. In general, the work is too heavy for young boys and girls. The trades that mainly attract boys are painting, carpentering, and plumbing. It is seldom that the boys do more than wait upon the older craftsmen. The garment-making trade is the one in which most girls are found. The work of schoolgirls consists largely of doing piecework at home, where they are employed directly by their parents and indirectly by the manufacturers. Those who work in the so-called "sweat shops" during summer vacation are classed under factory work. The greatest hardships under this class of employment are found in the long and irksome service at home during out-of-school hours. In many cases the surroundings are not conducive to health, and the mental development of girls so employed, even though they attend school regularly, must in many cases be seriously hampered. Under favorable conditions, industrial work should offer good opportunities for children to discover the advantages and disadvantages of such work, to learn something about some important occupations that may be a means to a livelihood, and to contribute to the support of themselves while attending school.

7. *Labor.*—Over 10 per cent of the working boys and 1 per cent of the working girls investigated are engaged in a kind of work classed as labor. The following are some of the occupations grouped under this head as taken from the reports received: Working on road; teaming; ditching; cutting wood; mowing lawns; washing automobiles; sweeping, dusting, and scrubbing offices; beating rugs; caring for furnace; working around saloons, theaters, schools, and other public buildings. It may be seen that there is very little of this kind of work suited to children. The work is too heavy for children, and in most cases the environmental conditions are not suitable. Educationally there is nothing to commend employment of these types, except that children so employed will have an opportunity for learning the value of money as expressed by labor.

8. *Personal service.*—This group includes many kinds of occupations and employs nearly 2 per cent of the working boys and 10 per cent of the working girls investigated. Among the kinds of service rendered under this head may be mentioned the following: Work in barber shop, hairdressing, shoe shining, carrying grips, bell boy in

hotel, valet, waiter or waitress in restaurant, companion, leading the blind, etc. There is nothing in these occupations to commend them to school children. The environmental conditions usually are not satisfactory, and there are no educational advantages in such employment.

9. *Street trades.*—The selling of newspapers and other articles on the street supplies nearly 8 per cent of the working boys and nearly 2 per cent of the working girls with employment during out-of-school hours. The newspaper trade holds a large proportion of the children of this group, although many, especially girls, sell flowers. The newspaper workers are of two classes—those who deliver papers to homes for newsdealers and those who buy their papers independently and sell them on the streets. Frequently, boys deliver and sell at the same time, and for this reason the boys who deliver papers are grouped under this head rather than under the delivery and messenger-service groups. On account of recent child-labor legislation, the very young children are not being engaged as much as formerly for delivering papers. Attempts have been made recently to bring about legislation to prevent children within a minimum age from engaging in the paper business on their own responsibility.

On account of the work demanding attention largely in early morning and in the evening, it is very popular with school children. In many cases boys work from two to three hours before school and even longer after school. Occasionally they spend an hour or more at noon. It is very clear that children who spend more than four or five hours a day selling or delivering papers can not make the best use of their time at school and are likely to be so fatigued as to affect permanently the full development of mind and body. The associations, usually, are not conducive to good living, and many boys become victims of vice as a result of their street experience. The boys who survive these contaminating influences are probably stronger for their experience, but these are the exceptions. Boys who are engaged in such work spend their time in the open air and no doubt have opportunities for acquiring much useful knowledge concerning the affairs of life, but these advantages are offset by the undesirable features of the work. Yet, there is still a question whether work so well adapted, from the standpoint of hours of service, should be withheld from school children until some suitable substitute is provided.

10. *Delivery and messenger service.*—Next to work about the farm, delivery and messenger service holds the largest percentage of the working school children. Nearly 25 per cent of the boys are engaged in such work as running errands, taking orders, delivering goods, messages, etc., and peddling milk, bread, and the like. The work

lacks continuity. As boys grow up, they are automatically replaced by younger boys. Occasionally the duties of the messenger and delivery boys, through association with other people, are responsible for their securing permanent employment along some other line. In some phases of the work there are opportunities for useful experience, but on the whole these occupations are devoid of educational or vocational advantages. The work generally is of a wholesome nature, calling mainly for outside activities, but, like the newspaper trade, it throws the worker among contaminating influences. It is one of those schoolboy occupations that should be supplanted by a more wholesome and elevating employment.

11. *Caddying*.—This kind of employment holds about 3 per cent of the working boys of the grammar grades. It includes work on the golf links, tennis courts, and in bowling alleys, and although different in character, might be classed under the head of personal service. Those employed outside are engaged in a wholesome exercise, but those found in bowling alleys are often confined for many hours in "stuffy" quarters. Oftentimes the duties of the latter call for employment up to midnight, and the environment in many cases is objectionable. The outside work is without the objections of the bowling-alley activities, but both types are wholly without prospect.

12. *Unclassified employment*.—Under this head over 4 per cent of the working children are employed during out-of-school hours. The group comprises some very unusual kinds of employment for school children and includes, among others, fishing, trapping, sailing, playing musical instruments, posing for artists, etc. In general these are attractive occupations for children, but each requires special consideration.

SUMMARY.

Thirty-six per cent of the children are employed during summer vacation. Their total earnings amount to \$68,342.04, or an average of \$13.19. Seven per cent averaged \$69.01. Twenty-seven per cent of the children work during out-of-school hours throughout the year. Their average weekly earnings amount to \$1.51. Seven per cent of these workers averaged \$6.27 per week.

The kinds of employment are classified under 12 heads, namely: (1) Farm work; (2) housework; (3) work in factories, mills, and mines; (4) work in stores; (5) work in offices; (6) helpers in industrial occupations; (7) labor; (8) personal service; (9) street trades; (10) delivery and messenger service; (11) caddying; (12) unclassified employment.

Groups 1, 2, and 6 comprise occupations which are not undesirable and in the main are commendable for children. In these 47 per cent of the working school children find employment during out-of-

school hours. The occupations represented by groups 4 and 5 have some desirable features, but offer limited educational and vocational opportunities. The occupations of group 12 are mostly unobjectionable and with those of groups 4 and 5 may be considered second-rate occupations for school children. Combined, they furnish employment to 13 per cent of the working school children. The occupations represented by groups 1, 2, 4, 5, 6, and 12, therefore, may be regarded as the unobjectionable class, and they are selected by 60 per cent of the working school children. The remaining 40 per cent are found in occupations represented by groups 3, 7, 8, 9, 10, and 11, which are regarded as the objectionable class.

RECOMMENDATIONS.

The immediate elimination of children from these objectionable occupations is not recommended, but it should be the duty of the school, so far as possible, to instruct and guide children in the matter of employment. The school should be intrusted with the task of regulating the employment of children during out-of-school hours. It should be willing to undertake this additional responsibility in self-defense.

If the school is to be held responsible for the failure of children to keep up with normal progress, for the enormous number of withdrawals every year, and for the health and habits of the children, it should have better control over the forces that operate for and against its success.

As has been pointed out before, the incorporation into the school program of profitable home-project enterprises in gardening, home making, shopwork, and other phases of the practical arts may be the best solution to the problem of school-child employment.

WHY CHILDREN LEAVE SCHOOL.

That portion of the investigation relating to why children leave school contributes to the existing evidence on the subject to the extent that the information presented is based upon the reasons given by the children still in attendance rather than by those who have left school. The reasons given by the children who desire to leave are presented along with those of the children who undoubtedly will leave during the current year.

Table 3 (p. 27) shows that 1,117, or 8.5 per cent, of the children expressed a desire to leave. This, undoubtedly, is a smaller proportion than actually exists, for many children would hesitate to admit to their teacher that they desired to leave. The table shows also that 699, or 5.5 per cent, of the children intended to leave before the close of the current year. This figure, for salient reasons, may be

far from expressing the real proportion of those who undoubtedly will leave. The figures do not include those who leave to attend other schools. Some of the reports failed to indicate the number of children who had already left school, but, considering only the 11,333 children listed on the complete reports, 850, or 7.5 per cent, had left school during the school year up to the time the schedules were filled out, which in most cases was toward the end of the year.

Table 4 (p. 27) summarizes the children's reasons for desiring to leave. Of the number who expressed a desire, 405, or 34 per cent, gave for their reason that they did not like school. About the same number, 446, or 38 per cent, said that they wished to earn money, and 257, or 22 per cent, wished to learn a trade. There were 69, or 6 per cent, who had other reasons. Those who desire to leave so that they may earn money or learn a trade make up 60 per cent of the total. It is interesting to note that 60 per cent are anxious to go to work. Another astonishing feature of this investigation is that 32 per cent of the children who desire to leave school frankly admit to their teacher that they do not like school. Undoubtedly, there are others who, rather than make such an admission, give other reasons when at heart they are dissatisfied. The desire on the part of school children to work and to earn money and their general dissatisfaction with present conditions should be considered in any effort toward readjustment.

In Table 5 (p. 27) are shown the reasons for leaving as expressed by those who undoubtedly will leave. These reasons, as contrasted with those given in the preceding table, are determined by the teachers from personal knowledge of the home conditions and from consultation with the children. A direct examination of home conditions possibly would have given more accurate results, but the statements made by parents often are less dependable than those made by children. Parents, from a sense of pride, are inclined to magnify the family income. On the other hand, where parents are anxious to take their children from school, they are likely to minimize their income to justify their actions.

Forty per cent of the children are leaving because of economic necessity, 12 per cent because of the indifference of parents, 34 per cent because of the personal desire of the child, 5 per cent because of ill health, and 9 per cent because of unspecified reasons. Since the personal desire of the pupil and the indifference of parents indicate dissatisfaction, either by parent or child, it is safe to classify these reasons under one head, making 46 per cent. On account of modesty many of the children who fail to specify their reasons are in reality leaving because of dissatisfaction, and these undoubtedly would bring the dissatisfied group up to 50 per cent. About 90 per cent, then, of the children leave either from financial necessity or indifference. The

remaining 10 per cent leave on account of ill health or other unmentioned reasons.

On the same basis of grouping the reasons for leaving, Neill¹ found that 30 per cent of the children left school because of economic necessity and 64 per cent because of dissatisfaction. The findings of Lewis² in his investigation in Iowa cities were similar, showing 32 and 55 per cent respectively. Talbert,³ in his investigation of the stockyards district in Chicago, found the proportion to be 52 and 33 per cent, respectively. The proportion in this case is reversed and is accounted for largely in the difference in the economic conditions of the district under investigation. Mrs. Reed,⁴ in her Seattle investigation, found the proportion to be 30 and 36 per cent, respectively.

Economic necessity as a cause for leaving.—From Table 6 (p. 27) it may be seen that of the 850 pupils who left school during the current year, 341, or 40 per cent, left because of financial necessity, and 541, or 64 per cent, were known to be at work. With regard to the number who would have remained longer in school if remunerative employment had been available, comparatively few teachers attempted to answer the question. Nevertheless, 116 cases, or 14 per cent of the pupils who left, were so recorded.

From this investigation, as well as from others, it is apparent that economic necessity accounts for many withdrawals. It probably is not such a potent factor as the returns seem to indicate, for children often give this reason when they do not wish to admit their dislike for school. This belief is strengthened by the fact that 70 per cent of the children giving economic necessity as their reason for leaving previously admitted that they desired to leave school. In her investigation of homes in certain Massachusetts cities Miss Kingsbury⁵ found that about 30 per cent of the families could not afford to give the children schooling beyond the compulsory age limit. Some localities undoubtedly would show a higher proportion, as indicated by the survey of the stockyards district of Chicago. It is fairly safe to assume, however, that economic necessity accounts for not more than one-third of the withdrawals.

Dissatisfaction as a cause for leaving.—Dissatisfaction is the dominating factor in school leaving and probably accounts for at least 50 per cent of the withdrawals. It takes many forms. Very often it is due to the inability on the part of both parent and child to realize the

¹ Neill, Chas. P. "Woman and Child Wage-earners in the United States." Senate Document No. 645, 1910, p. 46.

² Lewis, E. E. "Work, Wages, and Schooling of Eight Hundred Iowa Boys." State University of Iowa Bul. 90, new series, 1915.

³ Talbert, E. L. "Opportunities in School and Industry for Children of the Stockyards District." University of Chicago Settlement publications, 1912.

⁴ Reed, Mrs. A. Y. "Seattle Children in School and Industry." Board of School Directors, Seattle, Wash., 1915.

⁵ Kingsbury, Miss Susan M. Rep. of Com. on Indus. and Tech. Ed., Mass., Senate Document No. 349, 1906, p. 111.

value or necessity of further schooling. Many parents believe that the experience gained in some of the common occupations of children is more useful in the preparation for the earning of a living than that gained in the ordinary elementary school. In many cases this is true and, as investigation has shown, age and work experience are the determining wage factors with the younger employees rather than school experience.

Dissatisfaction is sometimes due to a personal dislike to the teacher and to other trivial matters, but by far the most conspicuous source of dissatisfaction is backwardness, or inability to keep up with other children of the same age. Hoke found in his study of the schools of Richmond that 88.5 per cent of the children who dropped out to go to work had repeated grades before they left.¹

Table 7 (p. 28) shows the proportion of children of the various ages found in each of the three grammar grades. It may be readily seen that children of all ages between 10 and 18 years are found in all three grades, except that none of the 10-year-old children have reached the eighth grade. Only 28 per cent of the 13-year-old children are in the eighth grade, 42 per cent are in the seventh grade, and 30 per cent are in the sixth grade. When all grades are considered, even greater variation than this is shown. Ayres's examination into the progress of children in 78 city school systems showed that boys who have reached the limit of the compulsory attendance period are scattered through the grades from the kindergarten to the senior year in high school.²

The relation of age to grade is shown more vividly in Table 8 (p. 28). There are more 12-year-old children in the sixth grade, more 13-year-old children in the seventh grade, and more 14-year-old children in the eighth grade than of any of the other ages. Assuming that these children are making normal progress, 38 per cent of the pupils in the sixth grade, 35 per cent in the seventh grade, and 30 per cent in the eighth grade are backward. Some of the pupils, of course, are backward because of starting late, but it is evident that a larger proportion of the children fail to keep up with their classes, which necessitates a repetition of the work.

The solution of the backward-pupil problem, therefore, should go a long way toward solving the school-leaving problem and at the same time stop one of the most wasteful leaks in the educational system. While retardation can not be completely eliminated, it is believed that the evil can be mitigated in a large degree. The loss involved in repeating instruction to backward children amounts to a sum large enough to warrant the expenditure of large amounts in an effort to find the cause and to make the adjustments necessary to reduce the waste to the minimum.

¹ Hoke, K. J., Bureau of Education Bul. 3, 1916, p. 24.

² Ayres, S. P., Russell Sage Foundation Document E125, 1914.

SUMMARY.

Eight and one-half per cent of the children desire to leave school, and of these 34 per cent frankly state that they do not like school. Sixty per cent would rather go to work.

Of those who intend to leave during the current year, approximately one-third claim economic necessity as the reason and, except for a small proportion who will leave on account of illness or some unmentioned reason, the remainder leave on account of dissatisfaction expressed or implied.

Retarded or backward children are numerous, and the inability to make normal progress through the grades is the source of much dissatisfaction in the school.

RECOMMENDATIONS.

The remedy for the school-leaving problem should provide for, first, remunerative employment for children while attending school; second, a change in the educational methods, aiming to vitalize school work and thus make school more interesting and retardation less common; and third, the establishment of continuation courses for children who must leave school.

1. *Remunerative employment for school children.*—A few local examples in various parts of the country have shown that part-time employment for children of secondary grade is a feasible undertaking. Such a plan may be applicable in a limited way to the two upper grades of the elementary school, but, in general, the employment for children of the upper grades must assume the nature of home-project work. The work of the agricultural and home-making clubs among the rural children is of this nature. Home gardening, as it is promoted in some cities, also serves the purpose. Shopwork, garment making, business projects, and the like, when conducted on a real industrial and commercial basis and associated with home enterprises, furnish additional examples. Unfortunately, there has been too little effort made to commercialize these activities. The educational value of such enterprises is greatly enhanced by conducting them on a real money-earning basis. If more attention were given to this feature, and every effort made to insure profitable employment for the children so engaged, there would be fewer withdrawals from school, fewer children stranded in "blind alley" occupations, and a different attitude toward the school. As observed under another head, and as may be seen from consulting Table 10 (p. 28), gardening may be made fairly profitable for children while attending school. Nine per cent of the children engaged in gardening produced an average of \$15.66 worth of vegetables, fruit, and flowers during a single season. Twenty-two children averaged \$61.25. Since few schools

offer instruction in gardening, it is safe to assume that these records are the result of independent effort. With a knowledge of the success of individual children while working under the direction of a skilled teacher, these results even do not seem phenomenal. With home-project work in gardening as a regular school function, much better results may be expected.

Compared with other common occupations of children, gardening makes a good showing from a money-earning standpoint. The children who worked at general occupations during summer vacation earned an average of \$13.19 and only 7 per cent earned \$50 or over. The average weekly earnings of the children who work during out-of-school hours amount to \$1.51, and 117, or 3 per cent, earn \$5 or over per week. As startling as these results seem, the children who undertake gardening on a reasonable basis are able to make much more in proportion to the time employed. Most of the children who have made phenomenal records in general employment are those who have large paper businesses requiring much time both in the early morning and late at night. The same amount of time spent on gardening would be more profitable.

There is an opportunity, therefore, for profitable home project work in gardening, even in cities and towns. Other lines of wholesome project work may be undertaken, with equally satisfying results, especially for seasons of the year when gardening requires little or no attention. This is not child labor. It is earning while learning and learning while earning.

2. *To change educational methods.*—It has been repeatedly said that school work needs vitalizing, and to this end the belief prevails that it should center about concrete occupational pursuits. Since real education is a matter of sense training, it becomes necessary for the school to provide for its pupils a wider range of experience. As industrial specialization and population centralization progress, there will be an ever-increasing need for a more active type of training. This need for a vitalizing influence fortunately may be supplied in the same way, as suggested for the providing of remunerative employment for school children. Gardening, shopwork, home-making activities, and business enterprises performed under the joint direction of school and home should make school work easier, more interesting, more purposeful, and more effective from the standpoint of the child. Children would then have their attention focused upon preparing for a definite kind of work. They would know the meaning of education. They would readily see its connection with the affairs of life and would come to appreciate its advantages and the obligations that follow. Such a readjustment should go a long way toward solving the problem of the backward pupil and consequently that of school leaving. With its influence upon habit formation, it also

should have a far-reaching influence upon solving many of the dominant social problems of the time.

The evidence presented here and that collected by other investigators shows that many children unnecessarily leave school on reaching the legal age limit. If the reorganization of school methods and processes as suggested here should not materially mitigate this evil, there is need for extending the period of school responsibility. Much has been accomplished by compulsory school attendance, but the idea of making school work more attractive should be productive of even better results. Legislative methods usually succeed in bringing the child bodily to school, but something more is needed to bring him there in mind and in heart. Few people question the effectiveness of the school system as a whole, but certain weak spots are apparent. That so many parents allow their children to leave on reaching the legal age limit suggests the possibility that schooling is not a good investment. If every year that the child remains in school can not be made to pay from the standpoint of earning a living, it is an injustice to require him to remain there. It behooves society, therefore, to make sure that school attendance is profitable for the individual. If it is not profitable for the individual, it is very doubtful whether it is profitable for society.

3. *Continuation instruction.*—For those children who have left school to go to work and for those who will leave before being prepared for the duties of life and citizenship there is need for continuation instruction. The type of instruction commonly given in night schools is not sufficient. A large part of the instruction should be of an occupational nature. There will be need for much individual work to suit the needs of the various members of the class. Such instruction, of course, should aim to prepare the young people for the occupations of the community. In some way the school should keep in closer touch with the children who have left. It should render direct service not only by way of furnishing needed instruction, but by guiding the youth along suitable vocational channels.

HOME GARDENING AS A SUBSTITUTE FOR THE COMMON FORMS OF EMPLOYMENT FOR SCHOOL CHILDREN.

It is well known that many families need the wage-earning support of their children even while attending the elementary school, without which support many parents could not afford to continue to send their children to school. It is also well known that children need a wide range of active experience for the proper development of the senses. Furthermore, children need active employment to insure the formation of industrious habits and to guard against the

evils attending idleness. Lastly, children need to know the meaning of work.

A large proportion of the children are anxious to leave school at the earliest moment of exemption, to put away childish things, to become wage earners, and to take an active part in the great busy world. School does not satisfy the longing for a plunge into the affairs of life. It has been shown that many children engage in undesirable occupations while attending school, and a large proportion of them continue in these occupations after leaving school. Since many of these occupations offer no inducements for children above a certain age, there comes a time when they must be given over to younger children. The older children, then, wholly unskilled in any special work, must look for some other means of making a living. They change from one job to another, and sooner or later join the army of the unemployed.

Since the school is the institution established and designated by society to prepare the individual for the duties of life, it should be given a wider range of influence. It should not be expected to perform its functions properly if it is denied the necessary facilities for such preparation. Neither can the school fulfill its obligations if society withholds from it the right of control over the activities of children during the whole preparatory period, whether in or out of school. Such additional responsibility the school should gladly accept in self-defense. These additional obligations are not necessarily additional burdens. Any adjustment that provides for active participation in the affairs of men, as a part of the school program, means simply a changing from artificial to natural methods of training. Teaching becomes easier, children become interested, and parents become convinced of the value of education—the expensive gift of society—which in the past they have been forced to accept.

Gardening, as an intensive phase of agriculture, constitutes only one kind of employment that should be provided for children. On account of its intimate relation to the life of all people, it should be regarded as one of the most important forms of activity at the disposal of the children of the elementary school. On account of the general interest in agriculture, from the standpoint of either production or consumption, it is well adapted to the prevocational period in education. Any knowledge concerning agriculture that may be acquired by children may be turned to good account, whether or not they follow agriculture as a vocation. Many people obtain much pleasure, and incidentally much profit, from agriculture as an avocation and all are interested in the products of the soil. Agriculture, then, should be regarded as one of the chief occupations about which modern educational effort should center. Many phases of the subject are

amenable to school instruction in rural communities, but the gardening phase is the one commonly accepted in connection with urban schools.

School officials quite generally approve of gardening, and the work is being promoted by many schools. A recent inquiry showed that 1,220 cities and towns, or 78 per cent of those having a population of 2,500 or over, were encouraging gardening. The inquiry showed also that \$106,680 has been set aside by school officials for the promotion of the work. But very little of the gardening work has been undertaken on a serious, businesslike basis. The recreational and esthetic, rather than the vocational aspects of the work, have been emphasized. The trend at the present time, however, is to encourage home gardening on an intensive commercial basis. Some schools also have engaged skilled teachers on a 12-month basis and are furnishing instruction to the children in accord with the recommendations of the Bureau of Education.¹

The present investigation shows that 3,901, or 27 per cent, of the children conducted gardening exercises during the summer of 1915 (see Table 9, p. 28). The estimated value of the produce raised is \$14,001.07, making an average value of \$3.59 per child. This does not wholly express the value, for many children conducted ornamental gardening, on which no money value can be placed. Table 10 (p. 28) shows some of the high records in garden production. Twenty-two children averaged \$61.25 for the season, and this, put on a weekly basis, amounts to \$1.18 the year round. Considering the fact that garden work occupies the attention of the children only part of their spare time, and is practiced only during the summer months, the work is very profitable. These achievements are not remarkably high, and with a good system of garden instruction most children should approach these records. The table shows also the total area and the average area used by the pupils in the production of their crops. Some children utilized as much as an acre of land, while others cultivated only a few square feet, the average being 1,101 square feet, or a piece of land about 34 feet square. A very small proportion of the gardens, however, equal this area. By eliminating the gardens of one-half acre or over, the average area is reduced to about 350 square feet. The average production amounts to 3 cents per square foot. The best use of the land under cultivation, therefore, is not being made, for many individual records show returns as high as 15 cents per square foot.

The total area available to all the children included in the investigation amounts to a little over 314 acres, or an average of 961 square feet. These figures are low, for experience has shown that there is

¹ Bul. 40, 1916, discusses the organization of gardening in the school.

more land available than is generally believed. The vacant lots of the neighborhood are not considered in the above estimate, and from a knowledge of the conditions it is safe to assume that in most cities and towns there is abundant land for the use of the children. In the congested sections of a few of the largest cities it may be necessary to divide the land into very small plats and to use some of the vacant land in the suburbs.

If all of the children in the sixth, seventh, and eighth grades throughout the country should utilize an average of 961 square feet of land (the amount shown to be available) and produce an average return of 3 cents per square foot, the total production would amount to over \$130,000,000. If the land contained in vacant lots were included, about twice this return should be expected. With a good system of garden instruction, the average return per square foot could be multiplied by three, and this increase in production easily would take care of the cost of furnishing instruction.

SUMMARY.

Twenty-seven per cent of the children conducted independent garden exercises.

The children's gardens averaged 1,101 square feet, and gave an average return of \$3.59.

There were 361 children who raised produce valued at \$10 or over; 81 valued at \$25 or over; 30 valued at \$40 or over; and 22 valued at \$50 or over.

There is available for all pupils an average of 961 square feet of land for the purpose of gardening. This amount of land with intelligent handling should produce at the rate of 10 cents per square foot, returning to each of the operators \$96.10.

RECOMMENDATIONS.

The recommendations of the Bureau of Education concerning the organization of gardening in city schools are presented in a previous publication (Bul. 40, 1916), and it is therefore unnecessary to repeat them here.

There are many difficulties in the way of a complete and sudden reorganization of school work to provide for gardening and other practical arts instruction. The proposed adjustment contemplates a widely different method of attack and necessitates a reorganization of school work. Unless a complete change is made from the old to the new method, there will be no opportunity to measure the effectiveness of the plan. It would seem that the most effective way of

demonstrating the value of the new method is to try it out under favorable conditions in one school at a time. If the plan possesses merit, the people will demand its extension through the whole school system of any city or town. Too often attempts to introduce new features fail from a compromised effort to inaugurate them throughout the whole system with insufficient financial support and inadequate experience.

One of the conspicuous changes needed consists in the rearrangement of the school year so that the summer vacation may come in the middle of the year instead of at the end. Under present conditions the children at the end of the year drop everything pertaining to school. The summer vacation is given over to activities entirely distinct from school work. On returning to school at the end of the long vacation the children enter new classes, meet new teachers, and commence new studies. If the school year commenced with January and ended with December the summer vacation might be made decidedly more useful than it is at the present. It is not necessary to burden the children by heavy assignments, but there should be some kind of continuity of thought and purpose to eliminate such a long waste of time as is the case under present conditions. With the vacation coming at the end of the year there can be no work assigned, and after a lapse of 10 or 12 weeks the children return and are compelled to relearn that which was unused and forgotten during the summer. The work of the summer should be so completely different that it will still serve the purpose intended and at the same time furnish an opportunity to crystalize the knowledge acquired during the year. The summer should be the time for performing much of the home project work, which should be of such a nature that children may acquire a practical experience in and enjoy the satisfaction gained from conducting a real commercial or industrial enterprise. The summer work should be of such a character also as to furnish remunerative employment, and in this way the child may learn the value of money expressed in work, and be able to contribute something to his support and the support of the family.

As previously intimated the school should have control of all the activities of children above a certain age, whether in or out of school. In this way teachers may point out the dangers and the undesirable features of certain occupations. While home project work eventually should provide all the employment children need during out-of-school hours, there will be abundant opportunity through many years to come for teachers and school officials to render a valuable service by way of directing the outside activities of children and of exercising control over their employment.

STATISTICAL TABLES.

TABLE 1.—*Amount and money value of employment of the children of the sixth, seventh, and eighth grades, 1916.*

States.	Pupils employed at work other than gardening.		Per cent of pupils employed at work other than gardening.	Income from employment during summer.	Average income from employment during summer.	Number who earned \$50 or over.		Per cent who earned \$50 or over last summer.	Average income of those who earned \$50 or over.	Number who work during out-of-school hours.		Per cent who work during out-of-school hours.	Average weekly earnings.	Number who earn \$5 or over per week.		Per cent who earn \$5 or over per week.	Average weekly earnings of those who earn \$5 or over per week.
Alabama.....	97	25		\$2,052.52	\$37.34	14	14		\$75.20	84	22		\$3.42	11	13		\$7.59
Arkansas.....	83	34		1,131.40	20.57	7	8		70.50	74	30		1.43				
Connecticut.....	389	33		4,935.63	15.23	29	7		62.17	286	24		1.47	12	4		5.83
Delaware.....	21	36		222.50	13.09	1	5		70.00	20	34		.91				
Iowa.....	869	41		4,204.97	17.59	73	8		68.80	587	28		1.64	28	5		5.77
Michigan.....	1,436	46		19,812.60	11.75	71	5		72.35	964	32		1.07	19	2		5.95
Missouri.....	204	36		5,082.65	26.05	32	16		82.71	98	18		2.11	6	6		8.52
Ohio.....	964	45		13,453.40	16.30	63	6		73.09	714	33		1.32	12	2		5.00
Pennsylvania.....	1,019	23		15,734.72	17.42	63	6		63.21	931	21		1.09	29	3		5.72
Utah.....	87	53		1,054.95	12.12	4	5		60.00	49	30		1.11				
Washington.....	22	31		656.70	36.48	5	23		78.00	37	51		2.00				
Total.....	5,181	36		68,342.04	13.19	362	7		69.01	3,864	27		1.51	117	3		6.27

TABLE 2.—*Classes of occupations in which 4,526 children are engaged during out-of-school hours, including summer vacation.*

Nature of occupation.	Boys.	Per cent.	Girls.	Per cent.	Total.	Per cent.
1. Farm work (picking fruit or any other kind of farm or garden work).....	1,060	32.7	316	25.8	1,396	30.8
2. Housework:						
At home.....			321	26.2	321	7.1
Away from home, in domestic service, caring for children, etc.....			295	24.1	295	6.5
3. Factories, mills, and mines (canning, tobacco, shoe, and garment factories, breweries, creameries, cotton mills, etc.).....	67	2.0	14	1.1	81	1.8
4. Work in stores (clerks, wrappers, cash girls, etc.).....	292	8.8	41	3.4	333	7.4
5. Work in offices.....	47	1.1	11	.9	58	1.3
6. Helpers in industrial occupations (painting, carpentering, plastering, blacksmithing, etc.).....	84	2.5	25	2.0	109	2.4
7. Labor (including road work: teaming; ditching; cutting wood; mowing lawns; washing autos; janitor service and rough work around hotels, theaters, schools, and other public buildings; cleaning rugs; washing; scrubbing; etc.).....	352	10.7	16	1.3	368	8.1
8. Personal service (in restaurants, in barber shops, shoe shining, porter service, valeting, as bell boy, as companion, leading the blind).....	61	1.8	120	9.8	181	3.9
9. Street trades: Selling papers or goods of any kind on the street.....	256	7.7	24	1.9	280	6.2
10. Delivery and messenger service (running errands, taking orders, peddling, delivering goods, etc.).....	816	24.7			816	18.0
11. Caddying (work on golf links and tennis courts, in bowling alleys, etc.).....	95	2.9			95	2.1
12. Unclassified (fishing, trapping, sailing, playing musical instruments, posing for artists, etc.).....	153	4.6	40	3.3	193	4.2
Total.....	3,303	100	1,223	100	4,526	100

TABLE 3.—*Number of children desiring to leave school, the number who undoubtedly will leave, and the number who have already left during the current year*

	Number.	Per cent. ¹
Desiring to leave.....	1,177	8.5
Undoubtedly will leave.....	699	5.5
Have left.....	850	7.5

¹ A number of the schedules were incompletely filled out and were discarded. The percentages given here are based on the number of children listed on complete schedules only.

² Since the investigation deals only with the children of the three grammar grades, this figure is not comparable with those of other investigations which are based upon the total number of children entering school.

TABLE 4.—*Reasons given by children for desiring to leave school.*

Reasons for desiring to leave.	Number.	Per cent.
Do not like school.....	405	34
Wish to earn money.....	446	35
Wish to learn a trade.....	257	22
Desire to leave for other reasons.....	69	6
Total.....	1,177	100

TABLE 5.—*Reasons for leaving school obtained by the teacher from children who undoubtedly will leave during the current year.*

Reasons for leaving.	Number.	Per cent.
Family needs help.....	278	40
Indifference of parents.....	86	12
Personal desire of pupil.....	285	34
Ill health.....	37	5
Unmentioned reasons.....	63	9
Total.....	699	100

TABLE 6.—*Data concerning the 850 pupils of the current school year who had already left when the investigation was made. (1) Number who are known to be at work; (2) number who left because of financial necessity; (3) number who probably would have remained longer in school if remunerative employment had been available.*

Children.	Number.	Per cent.
Known to be at work.....	541	64
Left because of financial necessity.....	341	40
Probably would have remained longer in school if remunerative employment had been available.....	116	14

28 WORK OF SCHOOL CHILDREN DURING OUT-OF-SCHOOL HOURS.

TABLE 7.—*Proportion of children of the various ages found in each of the upper three grades.*

Ages.	Sixth grade.		Seventh grade.		Eighth grade.		Total in sixth, seventh, and eighth grades.	Per cent.
	Number.	Per cent.	Number.	Per cent.	Number.	Per cent.		
10 years or under.....	272	94	18	6			290	2
11 years.....	1,366	53	251	15	30	2	1,647	11
12 years.....	1,774	53	1,321	46	228	7	3,323	23
13 years.....	1,194	30	1,638	42	1,121	28	3,953	27
14 years.....	660	21	1,073	35	1,861	44	3,594	22
15 years.....	230	15	481	31	853	54	1,564	11
16 years.....	59	13	122	27	276	60	457	3
17 years.....	3	4	17	23	54	73	74	1
18 years or over.....	1	7	5	36	8	57	14	
Total (all ages).....	5,559	39	4,926	34	3,931	27	14,416	100

TABLE 8.—*Placement of children in the three upper grades according to age.*

Grades.	10 years or under.	11 years.	12 years.	13 years.	14 years.	15 years.	16 years.	17 years.	18 years.	All ages.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
Sixth grade.....	5	25	32	21	12	4	1			100
Seventh grade.....		5	27	33	22	10	3			100
Eighth grade.....			6	29	35	22	7	1		100

TABLE 9.—*Number of children conducting garden work, the value of the produce, the amount of land used, and the amount of land available for gardening.*

States.	Children with gardens.	Per cent of children with gardens.	Value of produce.	Average value per child.	Area in square feet used by pupils.	Average area in square feet used by pupils.	Area in square feet available.	Average area in square feet available. (all pupils).
Alabama.....	97	25	\$570.01	\$6.79	105,872	1,091	79,489	247
Arkansas.....	80	33	401.25	7.72	123,808	1,547	365,557	1,491
Connecticut.....	385	33	1,124.08	4.50	135,628	352	905,150	844
Delaware.....	17	29	2.00	2.00	1,761	103	4,839	179
Iowa.....	553	22	2,188.30	5.96	350,711	634	1,321,142	695
Michigan.....	911	29	2,950.58	7.11	2,135,248	2,343	6,356,308	1,529
Missouri.....	159	28	1,274.90	9.83	399,190	2,035	1,041,438	1,801
Ohio.....	517	25	2,458.13	5.73	630,113	1,223	2,473,918	1,348
Pennsylvania.....	1,102	25	2,740.24	4.64	399,041	353	1,053,048	244
Utah.....	55	33	220.50	6.12	41,055	746	131,847	976
Washington.....	25	35	31.10	2.07	2,659	106	172,410	2,394
Total.....	3,901	27	14,001.07	3.59	4,295,086	1,101	13,905,146	961

TABLE 10.—*Some high records in garden production.*

Income from children earning—	Number.	Per cent.	Amount.	Average.
\$10 or over.....	361	9.3	\$6,653.68	\$15.66
\$25 or over.....	81	2.0	3,087.88	38.12
\$40 or over.....	30	.7	1,672.88	55.76
\$50 or over.....	22	.5	1,347.50	61.25





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Publications intended for inclusion in this record should be sent to the library of the Bureau of Education, Washington, D. C.

PROCEEDINGS OF ASSOCIATIONS.

562. **National education association.** [Proceedings, 1916] Journal of the National education association, 1:641-736, March 1917.

Department of classroom teachers.—Contains: 1. Emma L. Johnston: Vocational guidance throughout the school course, p. 641-44. 2. J. F. Hsieh: Waste in education, p. 644-48.

Library department.—3. Bessie S. Smith: Joint administration of the high school library by the board of education and the public library, p. 652-56. 4. A. E. Bostwick: General principles involved, p. 656-58; Discussion, p. 658-60. 5. Willard Austen: Educational value of bibliographic training, p. 660-66; Discussion: Normal school libraries, p. 665-67. 6. Mary E. Hall: Report of committee on high school libraries, p. 667-71. 7. The rural school library, p. 672-76.

Department of physical education.—8. Gustave Straubenmüller: Physical training in the schools, p. 678-80. 9. C. W. Crampton: The New York system of physical training, p. 681-82. 10. Randall Warden: Physical training versus military training, p. 682-86. 11. Clara G. Baer: The health of college women, p. 686-89. 12. Rowland Haynes: Defining the work of physical training in relation to playground and recreation activities, p. 691-94.

Department of science instruction.—13. W. J. Hancock: The New York State syllabus of applied chemistry, p. 701-4. 14. F. A. Wolff: The relation of the bureau of standards to physical research and to the teaching of physics, p. 709-12. 15. L. W. Goldrich: The conservation of natural resources through education, p. 718-22. 16. John Dewey: Method in science teaching, p. 725-30. 17. I. C. H. Robinson: Training of science teachers, p. 730-31. 18. T. M. Balliet: Training of science teachers, p. 731-33.

563. **New York (State) University convocation.** Proceedings of the fifty-second convocation . . . Albany, N. Y., October 19, 20, 1916. 222 p. 8°.
Contains: 1. Irving Fisher: The importance to health of physical training in the schools, p. 13-18. 2. R. T. McKenzie: The value of physical and military training in peace and war, p. 18-24; Discussion, p. 24-29. 3. Leonard Wood: Physical and military training, p. 29-32. 4. James Sullivan: The written word—the historian incognito, p. 57-67. 5. Bliss Perry: The written word—how university organizations can help toward a better day, p. 77-84. 6. T. H. Briggs: Possibilities of the junior high school, p. 92-103. 7. J. M. Glass: Results of the first year's work at Washington junior high school, Rochester, N. Y., p. 105-24. 8. C. M. Hill: The junior high school in Vermont, p. 124-35. 9. Mrs. August Belmont: The drama as a means of teaching, p. 157-65.
564. **Pennsylvania educational association.** Proceedings of the meeting held December 27-29, 1916. Pennsylvania school journal, 65: 385-97, March 1917.
Department of colleges and normal schools.—Contains: 1. A. L. Suhrie: Professional training in summer schools of elementary school teachers, p. 385-87. 2. E. F. Smith: The status of teacher training in the summer schools of the universities, colleges and normal schools of Pennsylvania, p. 387-90. 3. C. B. Robertson: Preliminary report on high school teaching population of Pennsylvania, p. 391-92. 4. Ezra Lehman: College credits to normal school graduates, p. 393-94. 5. A. J. Jones: Our colleges and professional training of secondary school teachers, p. 395-96.
Child study round table.—6. J. B. Britton: Work of an attendance officer, p. 397-401. 7. Mary R. Harris: Child study, p. 401-5. 8. Mary S. Adams: What a child should be taught the first year at school, p. 406-7.
Department of rural schools.—9. H. C. Fetterolf: Rural community vocational school, p. 411-14. 10. G. F. Green: Study of trees in rural schools, p. 414-16. 11. F. E. Baker: The rural practice school, p. 418-19. 12. C. F. Maxwell: Value of the township institute, p. 419-21.

EDUCATIONAL HISTORY AND BIOGRAPHY.

565. **Ainger, Arthur Campbell.** Memories of Eton sixty years ago. London, J. Murray, 1917. 353 p. plates. 12°.
566. **O'Brien, Michael J.** Early Irish schoolmasters in New England. Catholic historical review, 3: 52-71, April 1917.
567. **Slosson, Edwin E.** John Dewey: teacher of teachers. Independent, 89: 541-44, March 26, 1917.
Completes the series of "Twelve major prophets." Analyzes Dewey's educational philosophy.
568. **Watson, Foster.** The old grammar schools. Cambridge (Eng.), University press; New York, G. P. Putnam's sons, 1916. 150 p. front., 3 pl. 16°. (*Half-title:* "The Cambridge manuals of science and literature")
"Short bibliography": p. [143]-145.

CURRENT EDUCATIONAL CONDITIONS.

569. **Balliet, Thomas M.** The modern school proposed by the General education board. American education, 20: 466-70, April 1917.
570. **Beesley, Thomas Quinn.** Education in Mexico under the new constitution. Catholic educational review, 13: 293-301, April 1917.
571. **Bland, J. O. P.** The people and the party machine. Nineteenth century, 81: 528-39, March 1917.
Discusses among other things education in Great Britain. Declares the existing system of national education is extremely unsatisfactory.
572. **Campbell, John C.** The future of the church and independent schools in our Southern highlands. New York, Russell Sage foundation, 1917. 19 p. 12°.
573. **Connecticut. State board of education.** Educational inquiry—Glastonbury, Seymour, North Stonington, and East Windsor, 1916. Hartford, State board of education, 1916. 4 v. 8°. (Connecticut bulletin 29, 30, 32, 45.)
Surveys undertaken by special agents of the Connecticut State board of education.
574. **Dewey, John.** Current tendencies in education. Dial, 62: 287-89, April 5, 1917.
Surveys the efficiency and measurement movement and the tendency to develop experimental schools, as significant trends in current educational development.

575. **Gerwig, George W.** Public school dividends. Current education, 21:75-83, March 1917.

Dividends from public schools in school lands, school buildings, books, art and music, health, etc.

576. **Newark, Ohio.** Board of education. Review of past activities and suggestions for the improvement of the public schools of Newark. Prepared by the superintendent of schools, approved by the Board of education and ordered printed. February 20, 1917. Newark, Ohio, The Advocate printing co. [1917] 18 p. illus. 8°.

577. **Wilder, Amos P.** Yale in China. Asia; journal of the American Asiatic association (New York) 17:105-9, April 1917. illus.

Describes the "Yale mission" at Changsha, China, which is an institution for higher education of Chinese, officered by Yale university men, with a hospital and medical school attached.

578. **Wright, Robert H.** President's address before the Teachers assembly at the thirty-third meeting. Training school quarterly, 3:277-84, March 1917.

Address delivered before the North Carolina teachers assembly on educational conditions in North Carolina.

579. **Yarnall, Stanley B.** A helping hand to Mexico. Journal of the Association of collegiate alumnae, 10:454-62, March 1917.

Gives an explanation of the confused educational conditions in Mexico and what the college man and woman in the United States can do to help better conditions.

EDUCATIONAL THEORY AND PRACTICE.

580. **Dearborn, George Van Ness.** The formation of habits. Mother's magazine, 12:441, 475-76, May 1917.

This is the second of a series of articles for parents and teachers in whose care the training of young children is placed.

581. **Flexner, Abraham.** Education as mental discipline. Atlantic monthly, 119:452-64, April 1917.

Lays stress on the doctrine of interest. Discusses the selection and development of significant interests in education.

582. **Game, Josiah B.** Sanity in education. Florida schoolroom, 23:1-5, March 1917.

Delivered before the Florida educational association at Arcadia, December 28, 1916.

Criticizes the Flexner system of education and makes a plea for a sane education which would hold together the practical and cultural.

583. **Geyer, Denton L.** The wavering aim of education in Dewey's educational philosophy. Education, 37:484-91, April 1917.

A discussion of the individualistic and socialistic ways of thinking as applied to education.

584. **Hughes, James L.** Training the children. New York and Chicago, The A. S. Barnes company, 1917. 148 p. 12°.

585. **Keyser, Cassius J.** Educational ideals most worthy of loyalty. Educational review, 53:325-28, April 1917.

Discusses the ideal of liberal education.

586. **Passano, Leonard M.** False premises in the educational argument. School and society, 5:367-72, March 31, 1917.

The writer says that investigators may be sincere in their efforts to treat education as a "field of human engineering," and to treat the educational institution as a factory or machine shop, but their investigations and arguments are based on false premises.

587. **Pearson, Francis B.** Reveries of a schoolmaster. New York, Chicago [etc.] C. Scribner's sons [1917] 203 p. 12°.

CONTENTS.—In medias res.—Retrospect.—Brown.—Psychological.—Balking.—Lanterns.—Complete living.—My speech.—School-teaching.—Beefsteak.—Freedom.—Things.—Targets.—Sinners.—Hoing potatoes.—Changing the mind.—The point of view.—Picnics.—Make-believe.—Behavior.—Forefingers.—Story-telling.—Grandmother.—My world.—This or that.—Rabbit pedagogy.—Perspective.—Purely pedagogical.—Longevity.—Four-leaf clover.—Mountain-climbing.

588. **Porter, Laura Spencer.** Do you let your children do their own thinking? Mother's magazine, 12 : 424-25, 454-55, May 1917.
It is the child who never is allowed to reason things out for himself that becomes a slave to other and stronger minds—the man or woman who is led easily by men, emotions, and prejudices.
589. **Public school methods.** Teachers' guide, index. New ed. Chicago, The Methods company, 1917. 108, 54 p. 8°.
CONTENTS.—Vocational guidance.—The dictionary and how to use it.—The community center, by E. J. Ward.—Thrift.—Personal and community hygiene.—Disease and its prevention.—Index.
590. **Richmond, Kenneth.** The permanent values in education; with an introduction by A. Clutton-Brock. London, Constable & co. ltd. [1917] 136 p. 12°.
Presents the ideals of some of the great educators of the past, with an attempt at their reevaluation in terms of new conditions.
591. **Shields, Thomas Edward.** Philosophy of education. Washington, D. C., The Catholic education press, 1917. 446 p. 8°.
592. **Willmann, Otto.** Correlation of the school subjects. Tr. by Father Felix Kirsch. Catholic educational review, 13 : 302-10, April 1917.
A chapter from the English translation of Otto Willmann's "Didaktik." The translation of the complete book will be published by B. Herder, of St. Louis.

EDUCATIONAL TESTS AND MEASUREMENTS.

593. **Ashbaugh, Ernest James.** The arithmetical skill of Iowa school children. Iowa City, Ia., The University [1916] 63 p. diagrs. 8°. (The State university of Iowa. Extension division bulletin no. 24. [1st ser. no. 5].)
594. **Breed, F. S., and Down, E. F.** Measuring and standardizing handwriting in a school system. Elementary school journal, 17 : 470-84, March 1917.
Emphasizes the need of standard scores or the establishment of norms. Writers contend that it is desirable for any considerable school system, with the use of approved methods and the instruments of measurement now available, to: "(1) measure its present achievement, (2) establish norms of achievement, and (3) construct its own scales for measuring achievement." Report of an attempt to carry out the above program for the city of Highland Park, Mich., in grades 3-6, inclusive. Illustrated.
595. **Buckingham, B. R.** Correlation between ability to think and ability to remember, with special reference to United States history. School and society, 5 : 443-49, April 14, 1917.
596. **Chapman, James Crosby, and Rush, Grace Preyer.** The scientific measurement of classroom products. Boston, New York [etc.] Silver, Burdett & company [1917] viii, 191 p. illus. (incl. form) fold. pl. 8°.
Bibliography: p. 189-91.
597. **Corson, O. T.** Surveying the surveyors. Journal of education, 85 : 319-20, March 22, 1917.
An address at the Kansas City meeting of the Department of superintendence, National education association, February 1917.
Also in Ohio educational monthly, 66 : 133-38, April 1917.
598. **Cross, Allen.** Weighing the scales. English journal, 6 : 183-91, March 1917.
Gives a résumé of the different measurements for testing reading, spelling, grammar, composition, and literary appreciation; also a bibliography.
599. **Gates, Arthur I.** Experiments on the relative efficiency of men and women in memory and reasoning. Psychological review, 24 : 139-46, March 1917.
From tests of students in the University of California, the investigator concludes that women excel the men in memory work, and that men excel the women, but to a less degree, in reason work.
600. **Gray, William Scott.** Studies of elementary-school reading through standardized tests. Chicago, Ill., The University of Chicago press; [etc., etc., 1917] viii, 157 p. diagrs. 8°. (Supplementary educational monographs, pub. in conjunction with the School review and the Elementary school journal. no. 1.)
"Descriptive bibliography of reading investigations": p. 26-31.

601. **Melville, Norbert J.** Standard method of testing juvenile mentality by the Binet-Simon scale with the original questions, pictures, and drawings. Philadelphia, London, J. B. Lippincott company [1917] 140 p. illus. 12°.
602. **Meriam, J. L.** Measuring school work in terms of life out of school. *School and society*, 5 : 339-42, March 24, 1917.
Points out the defects in our present measurements and says that measurements of abilities should be in terms of normal experience rather than in abstractions.
603. **Murphy, Gardner.** An experimental study of literary vs. scientific types. *American journal of psychology*, 28 : 238-62, April 1917.
Main objective of this study is to determine the differences between subjects having a predominant interest in and aptitude for literature, and those having a predominant interest in and aptitude for science. Work carried out in Yale psychological laboratory.
604. **O'Hern, Joseph P.** Organized effort in educational research in city school systems. *Journal of the New York state teachers' association*, 4 : 87-94, April 1917.
605. **Shaw, Elisabeth Ross.** Suggestions for child study. *Kindergarten and first grade*, 2 : 146-50, April 1917.
Suggestions for marking and ranking mental tests for children and the practical use of such tests in the problems of grading, promotion, discipline, and motivation.
606. **Ward, C. H.** The scale illusion. *English journal*, 6 : 221-30, April 1917.
Says that "a mere preparatory teacher is dazed when he hears serious consideration of a scale for grading composition."
607. **Wolfe, Carmie S.** The Topeka scale for judging compositions. *Illinois association of teachers of English bulletin*, 9 : 1-12, March 1, 1917.
608. **Woody, Clifford.** Measurements of some achievements in arithmetic. *North-west journal of education*, 28 : 351-55, April 1917.

SPECIAL METHODS OF INSTRUCTION.

609. **Mapes, E. K.** The direct method in teaching German. *Colorado school journal*, 32 : 24-28, March 1917.

SPECIAL SUBJECTS OF CURRICULUM.

610. **Baggs, Thomas A.** The teaching of thrift in schools. *Education*, 37 : 514-17, April 1917.
611. **Bagley, W. C.** The place of the study of the natural sciences in a liberal education. *Educational bi-monthly*, 11 : 189-98, February 1917.
612. **Bureau of safety, Chicago, Ill.** Methods for instruction in accident prevention for use in schools. 1917. 31 p. illus. 8°.
613. **Cajori, Florian.** A history of elementary mathematics with hints on methods of teaching. Rev. and enl. ed. New York, The Macmillan company; [etc., etc.] 1917. 324 p. 8°.
614. **Caldwell, Otis W.** An interpretation of the new point of view in science teaching. *General science quarterly*, 1 : 131-36, March 1917.
Condensed from an address given before the General science club of New England, November 1916.
615. **Carr, W. L., and others.** A course of study in Latin. *Classical journal*, 12:438-55, April 1917.
Instruction in Latin in the University high school, University of Chicago.
616. **Eikenberry, W. L.** Bibliography of general science. *General science quarterly*, 1:146-52, March 1917.
617. **Greene, James S.** Kinaesthesia, a new aid to the teaching of speech. *English journal*, 6:248-53, April 1917.
Defines kinaesthesia as the sense of muscular movement of the parts which are active in producing speech, as the tongue, lips, jaw, etc. Explains this through "a demonstration of radiographic plates that show the different positions assumed by the vocal organs in uttering the fundamental sounds of our language."

618. **Henderson, R. H.** Recent advances in the teaching of mathematics. Mathematics teacher, 9:141-47, March 1917.
619. **Hopkins, Edwin M.** Wanted: a bureau of definition. English journal, 6:131-45, March 1917.
President's address before the National council of teachers of English, New York City, December 1, 1916.
Thinks the Council should establish a bureau of definition. Such a bureau to find what essentially is meant by the intellectual and the spiritual, the religious and the scientific.
620. **Hoyt, Wilbur F.** A plea for the study of elementary astronomy. School science and mathematics, 17:341-47, April 1917.
621. **Isenbarger, Jerome.** A first course in zoology in the high school—content and organization. School science and mathematics, 17:289-94, April 1917.
Read before the biology section of the Central association of science and mathematics teachers, Chicago, December 2, 1916.
622. **Kent, Roland G.** Latin and Greek in the newspapers. Old Penn, 15:386-90, March 30, 1917.
A paper read at the fourth annual meeting of the Philadelphia society for the promotion of liberal studies, on March 23, 1917.
Shows the extent the classics are used in newspapers, advertisements, etc.
623. **Livingstone, B. W.** A defence of classical education. London, Macmillan and co., 1916. 278 p. 12°.
Presents the case for Greek, Latin, and grammar and prose composition, and discusses various proposed reforms in classical instruction.
624. **Lohmeyer, Lillian.** The modern trend of art in our public schools. Indiana instructor, 1:18-22, April 1917.
625. **London county council.** Class singing and ear training in schools, with syllabus in musical theory and notation. School music, 18:5-10, March-April 1917.
To be continued.
From the London School music review.
626. **Persons, Charles E.** The introductory course in economics. Educational review, 53:350-70, April 1917.
627. **Quickstad, N. J.** Some phases of the general science problem. General science quarterly, 1:153-61, March 1917.
The early history of science development and the present status of general science.
628. **Redway, Jacques W.** A heretic's rank heresy. Journal of education, 85:370-73, April 5, 1917.
The author says that the study which did the most for him was Latin. Tells of the training he had in Latin and shows of what value it was to him.
629. **Richards, Mabel M.** The practical in arithmetic. Elementary school journal, 17:521-24, March 1917.
An attempt to show how a review course in eighth-grade arithmetic may be centered around one large problem. The problem discussed is centered around the building and furnishing of a city home.
630. **Steeves, Harrison B.** High school English and college English. English journal, 6:146-55, March 1917.
Writer concludes that "it is impossible to make a reasonable distinction between college entrance requirements in composition and the useful equipment of any fairly educated young man or woman."
631. **Ward, C. H.** What is English? A book of strategy for English teachers. Chicago, Scott, Foresman and company [1917] 261 p. 12°.
632. **Wisconsin state teachers' association.** A definite music lesson for primary and elementary schools. A report presented to the music supervisors of Wisconsin, at the State teachers' association. School music, 18:17, 20-24, March-April 1917.

633. **Wolfe, A. B.** Shall we have an introductory course in social science. *Journal of political economy*, 22:253-67, March 1917.

Cites reasons for such a course. Says that it must stand in some "effective relation to the freshman's experience, and must not encourage the false pride of sterile 'scholarship'."

634. **Young, Caroline M.** The German club. *Modern language journal*, 1 : 202-14, March 1917.

Gives examples of formal programs, and also some devices and experiences in conducting a German club.

RURAL EDUCATION.

635. **Davis, E. E.** A study of rural schools in Travis County, Texas, by E. E. Davis . . . Austin, Tex., The University [1916] 53 p. illus., diagrs. 8°. (*Bulletin of the University of Texas*. 1916 : no. 67. December 1, 1916)

636. **Galpin, C. J.** The country church an economic and social force. Madison, Wis. 48 p. illus. 12°. (*Agricultural experiment station of the University of Wisconsin*. Bulletin 278, January 1917.)

637. **Myers, Garey C.** Some opportunities that come to country schoolmasters. *Education*, 37 : 518-25, April 1917.

Says that in one particular "the teacher in the district school has failed most fatally, that is, to lead the country child to have a healthy attitude toward country folk and life and places." To be continued.

638. **Wilkinson, William Albert.** Rural school management. Boston, New York [etc.] Silver, Burdett & company [1917] xiii, 416 p. incl. front., illus., plan, forms. 12°. (*Teacher training series*, ed. by W. W. Charters.)

"List of material for collateral reading": p. 414-16.

SECONDARY EDUCATION.

639. **Bliss, Don C.** High-school failures. *Educational administration and supervision*, 3 : 125-38, March 1917.

Gives charts showing failures by subjects, etc., from returns made by 14 superintendents of schools in North Jersey. The majority of failures were in but a single subject.

640. **Davis, Calvin Olin.** Public secondary education. Chicago, New York, Rand McNally & company [1917] 270 p. 12°.

A history of public secondary education in Michigan. The secondary school system of Michigan is viewed as a type of that of the entire United States.

641. **Foster, J. Murray.** The junior high school in villages. *Education*, 37 : 495-503, April 1917.

Presents arguments for and against the junior high school. The writer, who is the supervising principal of the Dansville (N. Y.) high school, speaks enthusiastically of the junior high school of his town.

642. **Inglis, Alexander J.** The junior high school. *Educational standards*, 3 : 55-58, April 1917.

The defects in our present organization and the reforms that appear desirable.

643. **Koos, Leonard V.** Administering the time factor in the high school. *Educational administration and supervision*, 3 : 150-57, March 1917.

The problem of regulating the time element so that a unit in one subject will be the approximate equivalent for administrative purposes of a unit in another.

644. **Lewis, Ervin Eugene.** Standards of measuring junior high schools. Iowa City, Ia., The University [1916] [31] p. 8°. (*The State university of Iowa*. Extension division bulletin no. 25. [1st ser. no. 6].)

"Select bibliography on junior high school": p. [29-31]

645. **Musselman, H. T.** Newer ideals in organizing and building the university of the many. *Texas school journal*, 34 : 17-20, April 1917.

The second article in a series on high-school work in the state of Texas.

646. The present state of English secondary schools; by a secondary schoolmaster. *English review*, 24 : 235-42, March 1917.

Severely critical of English schools and methods.

647. **Smith, David Eugene.** Mathematics in the junior high school. Educational review, 53 : 391-96, April 1917.
648. **Thompson, Frank V.** The senior high school: its function and organization. Industrial-arts magazine, 6 : 179-83, May 1917.
Read before the National society for the promotion of industrial education, Indianapolis, February 24, 1917.
649. **Woodhull, John F.** The high-school situation. General science quarterly, 1 : 137-40, March 1917.
Reprinted separately.

TEACHERS: TRAINING AND PROFESSIONAL STATUS.

650. **Averill, Lawrence A.** Child psychology in the normal school. Education, 37: 473-83, April 1917.
Says that the normal school course in educational psychology should be in the nature of a supplement to work in child study.
651. **Hall-Quest, Alfred L.** Energy and enthusiasm. Virginia journal of education, 10 : 372-76, April 1917.
The writer says that no qualities are more influential in the classroom than energy and enthusiasm. Discusses four sources of enthusiasm in teaching.
652. **Hollister, H. A.** Courses in education best adapted to the needs of high-school teachers and high-school principals. School and home education, 36 : 216-21, April 1917.
A paper presented before the Kansas City meeting of the Society of college teachers of education, February 26, 1917.
The minimum content of professional courses which high-school teachers and principals should have.
653. **Johnson, Franklin W.** The professional reading of the high-school principal. School review, 25 : 233-42, April 1917.
Includes a classified list of 62 different titles, with annotations.
654. **Judd, Jeannette Mathews.** The ex-teacher as a mother. Normal instructor and primary plans, 26 : 21-22, May 1917.
In conclusion, the writer says, "The more women the schoolroom sends to the hearth, the more shall we see of the Montessori methods, the more shall we hear of the newer education and I am convinced, the less shall we read of the failure of our public schools."
655. **Koos, Leonard V.** Teacher-training departments in north central high schools. School review, 25 : 249-56, April 1917.
656. **McCracken, C. C.** Training of teachers while in service. Ohio teacher, 37 : 293-94, March 1917.
A synopsis of an address at the Kansas City meeting of the Department of superintendence, National education association, on a systematic plan for the after-training of normal-school graduates.
657. **Manning, George A.** Student teaching and observation. American school-master, 10 : 49-57, February 1917.
The methods followed in training future high-school teachers at the Michigan state normal college.
658. **Moritz, B. D.** Report of normal training in the high schools of Nebraska. Middle-west school review, 9 : 18-19, 18-21, March, April 1917.
659. **National society for the promotion of industrial education.** The selection and training of teachers for state-aided industrial schools (rev. ed.) New York city, National society for the promotion of industrial education, 1917. 64 p. 8°. (Bulletin no. 19.)
660. **Pittenger, B. F.** Problems of teacher measurement. Journal of educational psychology, 8 : 103-10, February 1917.
"The author criticizes current schemes of teacher measurement on the score of lack of differentiation for different types of work, overlapping of test rubrics, and attempting to take account of too many details. He suggests that we need studies of teachers of the same grade, the same subject, and on the same plane, e. g., that of the classroom process."

661. **Preston, Josephine Corliss.** Teachers' cottages. *Journal of the Association of collegiate alumnae*, 10 : 447-53, March 1917.
662. **Rapeer, Louis W.** The teaching process. *American education*, 20 : 473-77, April 1917.
Discusses (1) the teaching situation, (2) classroom management, (3) principles of teaching, and (4) types of teaching.
663. **Sharon, J. A.** The reciprocal relations of the normal school and the city system. *Educational bi-monthly*, 11 : 242-48, February 1917.
What the normal school and the city system should expect of each other in order that the interests of the people may be served best.
664. **Shear, S. B.** The ideal teacher. *Educational standards*, 3 : 23-25, 32-33, 38-40, March 1917.
665. **Stoutemyer, J. Howard.** The educational qualifications and tenure of the teaching population. *School review*, 25 : 257-73, April 1917.
First paper in series.
666. **Vincent, George E.** City comforts for country teachers. *American review of reviews*, 55 : 403-8, April 1917.
A description of the new teacher's house, at Alberta, Minn. A solution of the problem of housing rural teachers, especially when they are grouped in consolidated schools, at public expense. Illustrated.
667. **Weet, H. S.** Is the readjustment of the requirements for college, normal and training school entrance desirable? If so, how can it be accomplished? *Journal of the New York state teachers' association*, 4 : 41-49, March 1917.

HIGHER EDUCATION.

668. **Colton, Elizabeth A.** Junior college requirements in the South. *Meredith college, Quarterly bulletin*, ser. 10, no. 2 : 30-34, January 1917.
669. **Comfort, William Wistar.** Commercial scholarship. *Dial*, 62 : 290-92, April 5, 1917.
Discusses how the doctorate of philosophy may be saved from the clutches of commercialism, and its meaning fixed in our academic nomenclature.
670. **Council of church boards of education.** A statistical survey of Illinois colleges, by Warren Brown, survey secretary. [Chicago, Council of church boards of education, 1917] 78 p. illus. 12°.
671. **Farrand, Wilson.** Work of the college entrance examination board. *Educational review*, 53 : 371-90, April 1917.
Address delivered at the meeting of the Association of colleges and preparatory schools of the Middle States and Maryland, December 1, 1916.
Says that the two big problems confronting the board are the problem of history and the problem of comprehensive examinations.
672. **Johnston, J. B.** The university and the state. *School and society*, 5 : 391-401, April 7, 1917.
Says that the university is not concerned with the education of individuals for their personal pleasure or satisfaction, but that it trains for service. Advocates the selection of students at entrance and from step to step within the university. Thinks that it should weed out the poorest students, giving special opportunities to the best.
673. **Leighton, Joseph Alexander.** Democracy and intellectual distinction. *School and society*, 5 : 421-30, April 14, 1917.
The writer says that universities and colleges must now be regarded as the chief custodians of the higher intellectual and spiritual life of democracy. The universities may have other important and worthy aims in vocational training and material service to the state, but these should not be their primary aims.
674. **Vincent, George E.** Public health training in universities. *Journal of the American medical association*, 68 : 1013-16, April 7, 1917.
Presents details of the requirements in different institutions. Conditions for admission into a public health force.

675. **Young, B. E.** Taking stock. Meredith college, Quarterly bulletin, ser. 10, no. 2 : 19-29, January 1917.

The president's address at the twenty-second annual meeting of the Association of colleges and secondary schools of the Southern States, November 16, 1916.

What the Association has done and can do for higher education in the South.

SCHOOL ADMINISTRATION.

676. **Boynton, Frank D.** Cooperation in a school system. Educational review, 53 : 329-40, April 1917.

Discusses the powers and duties of the school board; the appointment and training of teachers. In order to safeguard the future of children, the control of schools should be independent of all partisan politics, etc.

677. **Buonvino, Orazio.** L'amministrazione centrale della pubblica istruzione. Studio di legislazione scolastica (dottrina, storia, legislazione straniera, diritto positivo italiano giurisprudenza, critica) Torino [etc.] G. B. Paravia e c. [1916] 342 p. 12°.

678. **Coffman, Lotus D.** The control of educational progress through supervision. School and home education, 36 : 212-15, April 1917.

An address delivered at Kansas City, February 27, 1917, before the National council of education.

679. **Doeden, Frederic.** The legal status of the city superintendent. School and society, 5 : 404-7, April 7, 1917.

Gives the legal provisions of states that have so far defined most satisfactorily the duties of the city superintendent.

680. **Talbert, Wilford E.** Are we spending too much money on our schools? California taxpayers' journal, 1:17-20, March 1917.

"Under this caption Mr. Talbert proposes to discuss from month to month a number of possible means of economy in the expenditure of public funds for education."

SCHOOL MANAGEMENT.

681. **Foster, William Trufant.** Should students study? New York and London, Harper & brothers [1917] 98 p. 16°.

682. **Jury, Jessie B.** Teaching pupils how to study Latin. Classical journal, 12:467-76, April 1917.

683. **Perrin, H. Ambrose.** Reviews, tests, and examinations. School news and practical educator, 30:338-39, April 1917.

The use of tests and their value.

SCHOOL ARCHITECTURE.

684. **Alt, Harold L.** The heating and ventilating of grouped school buildings. American school board journal, 54:27-28, 64, April 1917.

685. **Challman, S. A.** Desirable rural schoolhouses. Kentucky high school quarterly, 3:6-18, April 1917. illus.

686. **Johnston, William Walter.** Safe construction of school buildings. American school board journal, 54:15-17, 54-58, April 1917. illus.

The fundamental principles that govern the safe construction of school buildings.

687. **Rapeer, Louis W.** The classroom of rural and village schools. School and home education, 36:228-32, April 1917.

Deals with classroom construction—size, lighting, walls and wall colors, floors, blackboards, platforms and doors, cloakrooms, and basement and drainage.

SCHOOL HYGIENE AND SANITATION.

688. **Andress, J. Mace.** Health education in rural schools. American journal of school hygiene, 1:49-53, March 1917.

A chapter from a forthcoming volume. Next month's article will discuss the sanitation of rural school buildings and grounds.

689. **Averill, Lawrence Augustus.** The present status of school health work in the 100 largest cities of the United States. *American journal of school hygiene*, 1:30-38, 53-62, February, March 1917.

A study based upon the returns received from a questionnaire sent to superintendents of schools of every city in the United States having upwards of 50,000 population.

690. **Kerr, James, ed.** The care of the school child. A course of lectures delivered under the auspices of the National league for physical education and improvement, May to July 1916. London, National league for physical education and improvement, 1916. 230 p. illus. 16°.

CONTENTS.—Introduction, by the Rt. Rev. Bishop Boyd Carpenter.—Introductory lecture, by Cyril Cobb.—The physical development of the school child, by R. E. Roper.—General personal hygiene, by James Wheatley.—On the care of the eyes, by James Kerr.—The mental hygiene of the child, by F. C. Shrubshell.—The care of the teeth of the school child, by R. D. Pedley.—Malnutrition, by C. J. Thomas.—The care of the nose, ear, and throat, by Eric Pritchard.—The tuberculous child, by J. E. Squire.—Infection in and out of school, by W. J. Howarth.—The cripple child, by R. C. Elmalie.—After-care: the special needs of the adolescent boy and girl, by R. A. Bray.

691. **Rapeer, Louis W.** Medical supervision of rural schools. *American journal of school hygiene*, 1:25-30, 63-68, February, March 1917.

The teacher's responsibility.

PHYSICAL TRAINING.

692. **National collegiate athletic association.** Papers presented at the eleventh annual convention, New York City, December 28, 1916. *American physical education review*, 22:125-82, March 1917.

Contains: 1. L. R. Briggs: The president's address, p. 125-28. 2. P. E. Pierce: College athletics as related to national preparedness, p. 128-38. 3. R. G. Gettell: The value of football, p. 138-42. 4. R. T. McKenzie: The making and remaking of a fighting man, p. 142-46. 5. G. E. Johnson: A defense of intercollegiate athletics, p. 146-53. 6. J. H. McCurdy: Some ethical problems surrounding intercollegiate athletics, p. 154-61. 7. P. C. Phillips: Scholastic conditions in intercollegiate athletics, p. 161-66. 8. R. I. Lee: The effect of athletics on the heart: the athletic heart, p. 166-69.

693. **Pendleton, Lillian Bruce.** Fundamentals in physical education in the public schools. *Educational bi-monthly*, 11:233-41, February 1917.

694. **Results of the round table conference of department of physical training, public schools of Milwaukee.** *Mind and body*, 24:77-80, April 1917.

An answer to Mr. George Ehler's article in *Mind and body* for February 1917, on A rational physical education.

Protests against using play alone as physical training material.

PLAY AND PLAYGROUNDS.

695. **Hetherington, Clark W.** Play school of the University of California. *Playground*, 11:19-25, April 1917.

See also article by Mrs. D. A. Hetherington on the same subject, on pages 25 to 29.

Both addresses were given at the Recreation congress, Grand Rapids, Mich., October 2-6, 1916.

SOCIAL ASPECTS OF EDUCATION.

696. **American sociological society.** Papers and proceedings, eleventh annual meeting . . . held at Columbus, Ohio, December 27-29, 1916. Vol. XI. The sociology of rural life. Chicago, Ill., University of Chicago press [1917] 233 p. 8°.

Contains: 1. E. A. Ross: Folk depletion as a cause of rural decline, p. 21-30; Discussion, p. 36-46. 2. G. W. Flake: The development of rural leadership, p. 54-70; Discussion, p. 70-81. 3. J. H. Cook: The consolidated school as a community center, p. 97-105. 4. A. D. Wilson: Co-operation and community spirit, p. 113-25; Discussion, p. 125-28. 5. C. W. Thompson: Rural surveys, p. 129-33. 6. G. H. Von Tungen: The results of some rural social surveys in Iowa, p. 134-62. 7. J. M. Gillette: The scope and methods of instruction in rural sociology, p. 163-80. 8. D. L. Sanderson: The teaching of rural sociology: particularly in the land-grant colleges and universities, p. 181-208; Discussion, p. 208-14.

697. **Hughes, Matthew S.** Dancing and the public schools. New York, Cincinnati, The Methodist book concern [1917] 29 p. 12°.
Unfavorable to the modern dance.
698. The increase of ignorance [by] the Editor. Journal of heredity, 8:178-83, April 1917.
Wards of Pittsburgh with most illiterates and most foreign born have high birth rate and also show lower infant mortality than some of the best educated and prosperous wards.
699. **Neverman, P. F.** The work of the high school principal in the development of the community. Wisconsin journal of education, 49:67-70, March 1917.
Address before the sixth Wisconsin country life conference in joint session with the Conference on agricultural education and the Southern Wisconsin teachers' association, Madison, February 9, 1917.
700. **Perry, Clarence Arthur.** First steps in community center development. New York city, Department of recreation, Russell Sage foundation [1917] 32 p. 8°. (No. Rec. 149.)
701. **Playground and recreation association of America.** Report of committee on recreation buildings. Playground, 11:33-41, April 1917.
Report was given at the Recreation congress, Grand Rapids, Mich., October 2-6, 1916.
Discusses (1) how to adapt existing school buildings to neighborhood recreation use, (2) how to construct new buildings so that they shall include facilities for neighborhood recreation center work, and (3) how to construct municipal recreation buildings to be used by the entire community.
702. **Stanford's marriage rate.** Journal of heredity, 8:170-73, April 1917.
Three-fourths of men graduates of Stanford university marry, but only half of women. Possible reasons for the difference, and comparison with other institutions.

MORAL EDUCATION.

703. **Benton, A. H.** Indian moral instruction and caste problems; solutions. London, Longmans, Green and co., 1917. xi, 121 p. 8°.
704. **Driver, Levi J.** Moral education. Educator-journal, 17:399-401, April 1917.
Aim of moral training, the relation of morality to religion, and materials for instruction.

RELIGIOUS EDUCATION.

705. **Ooe, George A.** Religious education and general education. How is instruction in "religious education" related to instruction in "general education?" Religious education, 12:123-28, April 1917.
706. **Erb, Frank Otis.** The development of the young people's movement. Chicago, Ill., The University of Chicago press [1917] 122 p. 8°.
Origin and development of young people's organizations in connection with the churches.
707. **Humphreys, W. R.** The literary study of the Bible in Michigan high schools. English journal, 6:209-20, April 1917.
Advocates readings from the English Bible in our high-school courses in English literature. Through the King James' version, it has become "above all other books a monument of pure and noble English."
708. **Matthai, John.** The education of Christian students in India. International review of missions (Edinburgh) 6:305-12, April 1917.
Interesting presentation of the growth of Christianity in India, missionary colleges, etc.
709. **Moore, Ernest Carroll.** Religious training and vocational studies. The relation of vocational training to moral and religious education. Religious education, 12:114-22, April 1917.
Also in School and society, 5:361-67, March 31, 1917.
Says that practical education will not interfere with the idealistic training of the young, but on the contrary is certain to make idealism abound.
710. **Peabody, Francis G.** The religious education of an American citizen. Religious education, 12:94-102, April 1917.

MANUAL AND VOCATIONAL TRAINING.

711. **Dewey, John.** Learning to earn: the place of vocational education in a comprehensive scheme of public education. *School and society*, 5:331-35, March 24, 1917.
Address at the annual meeting of the Public education association, February 20, 1917.
712. **Shiels, Albert.** Relations and lines of demarcation between the fields of industry and public school education. *American education*, 20:460-65, April 1917.
The writer says that vocational education suffers from three dangers—it may be amateurish, it may be narrow and rigid, and it may be exclusive. To realize its purpose any program of industrial education must be a little more than industrial only, and in being industrial it must have the practical and cultural values of industry, i. e., it must be intensive, but never narrow.
713. **Snedden, David.** Publicly supported vocational education: is it undemocratic? *Manual training magazine*, 18:321-24, April 1917.
From an address before the Vocational education association of the middle west, in Chicago, January 18, 1917.
714. **Van Oot, B. H.** "Life topics" in industrial arts. *Midland schools*, 31:229-30, April 1917.
Vitalized teaching in industrial arts.

VOCATIONAL GUIDANCE.

715. **Bartlett, L. W.** Vocational guidance in Pomona City schools. Pomona City, Cal., Board of education, 1917. 24 p. 8°. (Pomona schools bulletin. Vocational guidance number. No. 5, March 1, 1917.)
Vocational guidance in the elementary and high schools, an outline for vocational thinking, recommendations, and samples of pupil's vocational record cards.
716. **Brewer, John M. and Kelly, Roy Willmarth.** A selected critical bibliography of vocational guidance. Cambridge, Mass., Harvard university [1917] 76 p. 8°. (Harvard bulletins in education, no. 4.)

AGRICULTURAL EDUCATION, SCHOOL GARDENS.

717. **Hurd, W. D.** Boys' and girls' club work in relation to agricultural education. *Journal of education*, 85 : 339-41, March 29, 1917.
718. **Iowa state college of agriculture and mechanic arts, Ames, Iowa.** High school courses in agriculture. Outlines prepared by the Department of agricultural education. Ames, Iowa, Agricultural extension department, 1916. 56 p. 8°. (Schools circular no. 5, December 1916.)
719. **Murdock, F. F.** School and home gardens. *Journal of education*, 85 : 349, 356, March 29, 1917.
School and home garden work carried on in connection with the State normal school at North Adams, Mass.
720. **Pugaley, C. W.** Vocational education—its relation to school gardening. *Nebraska teacher*, 19 : 348-51, April 1917.
721. **Whitten, J. H.** Gardening in the upper grades of the elementary school. *Educational bi-monthly*, 11 : 199-214, February 1917.
Suggestions on what to do and how to do it.
722. **Wisconsin.** Department of public instruction. Agriculture in the high school. A manual for the high schools of Wisconsin. Prepared by Henry N. Goddard. . . assisted by John A. James. Madison, Democrat printing company, 1917. 191 p. illus. 8°.

HOME ECONOMICS.

723. **Lord, Isabel Ely.** Practice houses for students in home economics. *Journal of home economics*, 9 : 151-62, April 1917.
Presented at the ninth annual meeting of the American home economics association, Ithaca, N. Y., 1916.

COMMERCIAL EDUCATION.

724. **Swift, John T.** Business education in Japan. Asia; journal of the American Asiatic association (New York) 17 : 128-31, 151, April 1917. illus.

PROFESSIONAL EDUCATION.

725. **Lee, Frederic S., and others.** Medical research in its relation to medical schools. Journal of the American medical association, 68 : 1075-79, April 14, 1917.

As a result of the great growth of research work, diminishing emphasis is being laid on medicine as an art and increased emphasis on it as a science. Discusses medicine and the university; research work in or outside of universities; responsibility of medical schools.

726. **Thayer, W. S.** Scholarship in medicine. Boston medical and surgical journal, 176 : 519-24, April 12, 1917.

Address before the students of Harvard medical school, February 26, 1917. Asserts the value of the humanities as a preliminary to the study of medicine.

CIVIC EDUCATION.

727. **Swift, Lucius B.** Failure to teach the foundations of liberty. Educational review, 53 : 341-49, April 1917.

Read before the American historical association at Cincinnati, Ohio, December 28, 1916. The history of liberty should extend to early periods of English history, and not be based solely on the events that led up to the American Revolution.

728. **United States. Bureau of naturalization.** Proceedings of the first citizenship convention, held at Washington, D. C., July 10-15, 1916. Washington, Government printing office, 1917. 86 p. 8°.

Contains: 1. R. S. Coleman: Evening school for foreigners in the northwest, p. 18-20. 2. M. Beatrice Johnstone: Playday of the public schools at Grand Forks, p. 33-34. 3. J. M. Berkey: Civic preparedness and Americanization, p. 35-43. 4. W. M. Ragsdale: Some of the problems of getting aliens into the night schools, p. 43-49. 5. Woodrow Wilson: Address, p. 52-54. 6. L. B. Alderman: What Portland, Oreg., is doing to Americanize foreigners, p. 55-57. 7. M. J. Downey: What Boston is doing in immigrant education, p. 62-68. 8. I. W. Schmidt: The Detroit business man's view, p. 68-79. 9. A. H. Melville: The industrial plan of education in Wisconsin, p. 79-85.

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729. **Earle, Ralph.** Life at the U. S. Naval academy; the making of the American naval officer. New York and London, G. P. Putnam's sons, 1917. xx, 359 p. illus. 12°.

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731. **Stimson, Henry L.** The basis for national military training. Scribner's magazine, 61 : 408-12, April 1917.

Among other phases of the subject takes up the question of military training in the schools.

732. **Teaching, vol. 3, no. 5, March 15, 1917.** (The Wyoming plan of military training in the schools.)

Contains: 1. I. B. Fee: The Cheyenne high school cadet system, p. 8-12. 2. S. B. Stockwell: The educational value of military training, p. 12-14. 3. E. A. Walker: The method of the Wyoming plan, p. 14-18. 4. Clair K. Turner: Military science and physical training, p. 19-23. 5. S. E. Kramer: The experience of Washington, D. C., in military training in the schools, p. 23-26. 6. L. O. Mathews: Military training and higher education, p. 26-30.

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733. **Bennett, Helen M.** Women and work; the economic value of college training. New York, London, D. Appleton & company [1917] 287 p. 12°.

734. **Dabney, Charles W.** The new education of women. Ohio teacher, 37 : 291-92, March 1917.

The new woman's college will be vocational as well as cultural; it will train women to work as well as to think.

735. **Fernier, Marcelle.** L'enseignement méthodique du français dans les classes secondaires des lycées de jeunes filles. *Revue universitaire*, 26 : 186-200, March 1917.
736. **Guillet, Cephas.** A study of the memory of young women. *Journal of educational psychology*, 8 : 65-84, February 1917.
 "In two successive years psychology students were tested for their ability to memorize series of nonsense syllables, digits, related and unrelated words, related sentences, and continuous prose. A little over half the material could be given after one reading. The effect of subsequent presentations, and the changes which the learned material undergoes are considered in detail."
737. **Jebb, Miss C.** The advantages of a classical education for girls. *Parents' review* (London), 28 : 161-67, March 1917.
738. **National society for the promotion of industrial education.** Evening vocational courses for girls and women. New York city, National society for the promotion of industrial education, 1917. 73 p. 8°. (Bulletin no. 23.)
739. **Seoon, Robert.** The need of a college for women in New Jersey. A survey . . . under the auspices of the New Jersey State federation of women's clubs, 1917. 28 p. 8°.

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740. **McGrew, J. H. Y. M. C. A.** work for Virginia negroes. *Southern workman*, 46 : 237-40, April 1917.

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741. **Massachusetts. Board of education.** Special report of the Board of education relative to training for injured persons. Boston, Wright & Potter printing co., state printers, 1917. 62 p. 12°. (House doc., no. 1733.)

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742. **Andrews, Harriet U.** Home training for deaf children. *Volta review*, 19 : 145-74, April 1917.
 An elaborate article of 30 pages. Discusses lip-reading, sense training, physical training, diet, reading and writing, etc.
743. **Nitchie, Edward B.** Class instruction in lip-reading. *Volta review*, 19 : 177-79, April 1917.
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744. **Bronner, Augusta F.** The psychology of special abilities and disabilities. Boston, Little, Brown, and company, 1917. 269 p. 12°.
745. **Crafts, L. W.** Bibliography of feeble-mindedness in its social aspects. *Journal of psycho-aesthetics*, Monograph supplements, 1: 1-73, March 1917.
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 This first section comprises the signed books and articles classified in alphabetical order by authors. Future sections will cover the anonymous material, official documents, and institutional reports.
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Reprint no. 379 from the Public health reports, v. 31, no. 47, November 24, 1916 (p. 3231-3247)

749. **Woods, Elizabeth L.** Provision for the gifted child. Educational administration and supervision, 3:139-49, March 1917.

Result of an investigation made for the purpose of ascertaining what our schools are doing to provide for children who are above average in native ability as well as in actual attainment.

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750. **Kirton, Charles H.** The principles and practice of continuation teaching. A manual of principles and teaching methods specially adapted to the requirements of teachers in commercial and continuation schools. London, Bath [etc., etc.] Sir Isaac Pitman & sons, ltd., [1916] 364 p. 12°.
751. **Loeb, Max.** A unique institution; an adult day school. American school, 4:78, March 1917.
 "An account by a member of the Chicago school board, of a day school for adults now being carried on in a section of Chicago's business district."
752. **Stoddard, A. E.** Public schools and the summer vacation. West Virginia school journal and educator, 46:15-16, April 1917.
 Gives an outline for summer activities in a medium-sized city.

LIBRARIES AND READING.

753. **Evans, Sarah C.** The reading of high-school students. Public libraries, 22:168, April 1917.
 Continued from Public Libraries, March 1917 (item 556).
754. **Johnson, Roy I.** The school and the library. English journal, 6:243-47, April 1917.
 Among other matters discusses the relation of library fiction and magazine literature to the course in English.

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755. Kindergarten legislation; by Louise Schofield. Washington, 1917. 30 p. (Bulletin, 1916, no. 45.)
756. Pine-needle basketry in schools; by William C. A. Hammel. Washington, 1917. 18p. illus. (Bulletin, 1917, no. 3.)
757. Rural school supervision; by Katherine M. Cook and A. C. Monahan. Washington, 1917. 63 p. (Bulletin, 1916, no. 48.)
758. Secondary agricultural schools in Russia; by W. S. Jesien. Washington, 1917. 22 p. (Bulletin, 1917, no. 4.)
759. Service instruction of American corporations; by Leonhard Felix Fuld. Washington, 1917. 73 p. plates. fold. chart. (Bulletin, 1916, no. 34.)



DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1917, NO. 22

THE MONEY VALUE OF EDUCATION

By A. CASWELL ELLIS

PROFESSOR OF THE PHILOSOPHY OF EDUCATION
THE UNIVERSITY OF TEXAS



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LETTER OF TRANSMITTAL.

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, February 15, 1917.

SIR: All admit the value of the education of the schools for general culture and esthetic appreciation and as a preparation for citizenship in a democracy, and most are willing to contribute out of the public funds to the support of the schools for these ends when they feel that the people are able to do so without too much sacrifice of what they call the necessities of life and too heavy a drain on their material prosperity. Comparatively few are aware of the close relation between education and the production of wealth, and probably fewer still understand fully the extent to which the wealth and the wealth-producing power of any people depend on the quantity and quality of education. The people themselves and their representatives in tax-levying bodies need to be shown that no other form of investment yields so large dividends in material wealth as do investments in popular education, and that comparative poverty is not to be pleaded as a reason for withholding the means of education, but rather as a reason for supplying them in larger proportion. To assist in this I recommend that the manuscript herewith transmitted be published as a bulletin of the Bureau of Education. The manuscript has been prepared at my request by Dr. A. Caswell Ellis, professor of the philosophy of education in the University of Texas. It is my purpose to transmit later, also for publication as a bulletin of this bureau, a manuscript by Dr. Ellis showing more specifically the direct and indirect relation of higher education to the production of wealth and to industrial development.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

THE MONEY VALUE OF EDUCATION.

The most valuable result of right education is the broadening, deepening, and refining of human life. This result can no more be measured by dollars and cents than truth, self-sacrifice, and love can be made out of pork and potatoes. While the higher things of the soul are priceless rewards which true education brings, they are not its only result. The material and measurable rewards of education should be made plain to those whose votes must determine the support of our educational system. Those who desire better support of that system should point out in terms that the people can understand the definite ways in which education promotes industrial efficiency and increases material wealth. That is the purpose of this bulletin.

NATIONAL WEALTH AND POWER DETERMINED BY EDUCATION.

Germany.—The concrete evidence of the effect of education in increasing industrial efficiency is overwhelming, whether considered from the national standpoint or from that of the individual citizen. For example, how else account for the fact that a nation like Germany, with limited natural resources, but with excellent public schools, has grown in wealth and power so much more rapidly than her neighbor, Russia, which has a vigorous and talented national stock and vastly better resources but poor educational facilities? That the phenomenal success of Germany is the direct result of her thorough educational system is generally admitted.

John A. Lapp says:¹

Germany, as a result of industrial training, already puts four times as much labor value into its manufactured articles as the United States. If this country merely equaled Germany's present record, we (the United States) would be manufacturing from the same raw products not \$20,000,000,000, but \$80,000,000,000 worth of finished articles.

President Vanderlip, of the National City Bank of New York, said:

In the group of great industrial nations there has come forward in recent years one that has taken a place in the very front rank among industrial competitors. That nation is Germany. Her people have lacked the peculiar

¹ "Case and Comment," Sept., 1913, p. 234.

EDUCATION INCREASES PRODUCTIVE POWER.

MASSACHUSETTS GAVE HER CITIZENS
7 YEARS' SCHOOLING

THE UNITED STATES GAVE HER CITIZENS
4.4 YEARS' SCHOOLING

TENNESSEE GAVE HER CITIZENS 3
YEARS' SCHOOLING

MASSACHUSETTS CITIZENS PRODUCED
PER CAPITA \$260 PER YEAR

CITIZENS OF THE UNITED STATES PRO-
DUCED PER CAPITA \$170 PER YEAR

TENNESSEE CITIZENS PRODUCED
PER CAPITA \$116 PER YEAR

IT PAYS THE STATE TO EDUCATE

FROM
"THE MONEY VALUE OF EDUCATION"
BY CHARLES W. DABNEY

REPRODUCED BY THE
BUREAU OF EDUCATION
WASHINGTON, D. C.

FIG. 1.

The figures in this chart are from "A World-Wide Law," by Charles W. Dabney, and are for 1899. The figures would be much higher for all in 1909, but the relative standing of each would be the same. The production for 1909, as estimated from the figures given by the 1910 census, would be: Massachusetts \$406, the United States as a whole \$332, Tennessee \$174.

inventive ingenuity which in many fields of industry has been the sole basis of our achievements. Her artisans have almost none of the delicate sense which makes the French handiwork superior to the obstructions of all tariff walls. But amidst this poverty of natural resources, and from among a people not signally gifted with inventive ability or artistic temperament, there has in a generation emerged an industrial nation which stands forth as a marvel of economic development.

I have had a somewhat unusual opportunity to study the underlying causes of the economic success of Germany, and I am firmly convinced that the explanation of that progress can be encompassed in a single word, the "school-master." He is the great cornerstone of Germany's remarkable industrial success. From the economic point of view the school system of Germany stands unparalleled.

Japan and Russia.—Similarly the relation of her school system to the remarkable development of Japan and her proved ability in the highly technical and complicated art of modern warfare is universally admitted. The defeated Kuropatkin states that the costly failures of Russia were due to the ignorance of her brave but untutored army and to the education of the Japanese. Writing of the causes of defeat, he said:

The noncommissioned officers in the Japanese army were much superior to ours, on account of the better education and greater intellectual development of the Japanese common people. The defects of our soldiers—both regulars and reservists—were the defects of the population as a whole. The peasants were imperfectly developed intellectually, and they made soldiers who had the same failing. The intellectual backwardness of our soldiers was a great disadvantage to us, because war now requires far more intelligence and initiative, on the part of the soldier, than ever before. Our men fought heroically in compact masses, or in fairly close formation, but if deprived of their officers they were more likely to fall back than to advance. In the mass we had immense strength, but few of our soldiers were capable of fighting intelligently as individuals. In this respect the Japanese were much superior to us. * * * Among many of the common soldiers whom we took as prisoners we found diaries which showed not only good education but knowledge of what was happening and intelligent comprehension of the military problems to be solved.

The United States and other countries.—The remarkable results in these instances can not be attributed to racial or climatic differences, for in like manner, in Denmark, in Scotland, in Switzerland, in Massachusetts, wherever there is adequate provision for education, there follow great industrial efficiency and national wealth.

On the other hand, in Spain, in Russia, in Turkey, in Mexico, wherever there is a lack of the necessary school system, there is the same story of poverty, revolution, and misery, regardless of race, climate, or abundance of natural resources. Even in the United States it has been shown that the earning capacities of the citizens of several States are in direct proportion to the efficiency of their school systems. Dr. Charles W. Dabney, who investigated this matter, found, for example, that the average schooling given in 1898-99 to

the citizens of Massachusetts was 7 years; to those of the United States as a whole, 4.4 years, while that of Tennessee was only 3 years. Corresponding to these figures, he found that the average daily production of the citizen of Massachusetts was 85 cents; that of the United States as a whole was 55 cents; while that of Tennessee was only 38 cents.¹

Mr. Dabney does not tell how he determined the productive capacity of the citizens of these States, but by taking the sum of the combined products of farms, factories, mines, and quarries, as given for each State in the 1910 report of the Census Bureau, and dividing by the population of the State, a very rough approximation of the average earning power of the inhabitants may be secured. When this is done, it shows a productive capacity for 1910 for Massachusetts of \$466 per year; for the United States as a whole, of \$332; and for Tennessee, of \$174.

Massachusetts spent in 1898-99 on her schools \$12,261,525 more than Tennessee, which spent only \$1,628,313, or \$4.62 per pupil, against \$38.55 per pupil spent in Massachusetts. But Massachusetts showed a productive capacity of \$144 more per year per inhabitant than did Tennessee, and \$90 a year more than the average for the United States. In total, Massachusetts put about thirteen millions per year more than Tennessee into her schools and received nearly four hundred million dollars annually in increased earning capacity, in large measure produced by the education of its citizens. Similar studies made by the late United States Commissioner of Education, William T. Harris, and Mr. Wadlin, former chief of the Massachusetts Bureau of Labor Statistics, showed practically the same results.

It would, of course, be very unfair to attribute all this difference in productive capacity to differences in the educational systems of the several States. The large capital on hand, the great trading centers and the numerous factories already established in Massachusetts give that State an advantage. Furthermore, the effect of climate, and many other factors, must be considered before the exact share played by education could be determined. In this and in all other comparative studies of peoples, it must be recognized that absolutely accurate estimates of the part played by education in economic development are not possible. Yet the unbiased observer must recognize that education is a controlling factor when he sees that among all varieties of races, and accompanied by all kinds of conditions of climate, natural resources, geographical location, economic and social environment, in every case educated people produce much and amass wealth, while uneducated people under the same conditions produce little and save less.

¹ *World's Work*, I, 587-88, Apr., 1901; and "A World Wide Law," the *University of Tennessee Index*, Ser. II, No. 10.

SCHOOLS A PAYING INVESTMENT FOR THE STATE

**MASSACHUSETTS SPENT \$13,889,838.00,
OR \$38.55 PER PUPIL, ON EDUCATION.**

**TENNESSEE SPENT \$1,628,313.00, OR \$4.69
PER PUPIL, ON EDUCATION DURING
THE SAME YEAR.**

**THAT YEAR MASSACHUSETTS CITIZENS
PRODUCED ON THE AVERAGE \$144 EACH
MORE THAN DID TENNESSEE CITIZENS,
OR A TOTAL OF \$403,969,824.00
MORE THAN TENNESSEE.**

**IF MASSACHUSETTS GIVES 12 MILLION
DOLLARS MORE TO SCHOOLS AND HER
BETTER EDUCATED CITIZENS PRODUCE
403 MILLION DOLLARS MORE PER YEAR,
HOW MUCH PROFIT DOES THAT STATE MAKE
ON HER INVESTMENT IN EDUCATION?**

**EDUCATION IS NOT A CHARITY
BUT
THE BEST PAYING INVESTMENT**

THE MONEY VALUE OF EDUCATION
BY CHARLES W. DABNEY

THE MONEY VALUE OF EDUCATION
BY CHARLES W. DABNEY

FIG. 2.

The figures are from "A World-Wide Law," by Charles W. Dabney, and are for 1899. The figures for 1909 show the same facts. Estimates based on the total productions recorded in the 1910 census reports show a per capita production for Massachusetts of \$466, for Tennessee of \$174, and for the United States as a whole \$332.

Other concrete illustrations of this fact are at hand. For example, Mullhall¹ gives the annual earning capacity of the inhabitants of several European countries as follows:

Nations with efficient educational systems.		Nations with inadequate educational systems.	
England	£36	Spain	£16
France	31	Greece	13
Germany	25	Russia	10

The effect of education upon the accumulation of wealth is equally notable. The figures given by Mullhall for the total wealth per inhabitant of these several European nations are:

Nations with efficient educational systems.		Nations with inadequate educational systems.	
England	£302	Spain	£135
France	252	Greece	101
Germany	156	Russia	61

Similarly, in America, Massachusetts, with slightly smaller population than Texas, has \$4,956,000,000 of accumulated wealth to \$2,836,000,000 possessed by Texas.² That this is not altogether due to the fact that Massachusetts is a much older State than Texas is shown by the fact that Wisconsin, a comparatively new State, with only about two-thirds the population of Texas, has an equal amount of wealth; and California, a newer State, with only two-thirds the population, has \$4,115,000,000 of wealth. All three of these richer States for years spent two or three times as much per child on education as Texas spent.

The relation of productive power to education is shown by the enormously increased rate of production that has come about everywhere since education became more generally diffused. The total wealth accumulated in America from 1492 to 1860, a period of 368 years, was \$514 per capita. From then till 1904, a period of only 44 years, this increased to \$1,318 per capita, or an addition in 44 years of \$802 per capita.³ Since that time the increase has been even more striking. This increase is partly due to increased valuations or the smaller purchasing power of the dollar; to the use of accumulated capital, and to many other things; but after due allowance is made for all these the conclusion is inevitable that the education of the Nation is largely responsible for vastly increasing the productive power of its citizens. The productive power of illiterate countries is not increasing at such rates.

¹ Industries and Wealth of Nations, pp. 391 and 393, published in 1896.

² All figures are from the Special Report of the Census Office on Wealth, Debt and Taxation, 1907, p. 37.

³ Figures from the Special Report of the Census Bureau on Wealth, Debt, and Taxation, 1907, p. 9.

Why educated nations produce more.—That there must be this intimate relation between education and earning power is obvious as soon as consideration is given to the demands of the processes of modern industry. The Asiatic farmer, with his stick plow, makes 6 cents a day,¹ and the illiterate Russian peasant with his primitive implements and methods earns 14 cents, while the American farmer earns many times these sums because his improved methods and implements, made possible by education, have increased his efficiency. The illiterate race is necessarily restricted to the bullock and the stick plow, while the educated nation mines and smelts ores, manufactures the reaper and the traction engine, fertilizes the soil, rotates crops, breeds better stock and better seeds by scientific methods, rises superior to flood, drought, and disease, and multiplies efficiency a hundredfold.

Natural resources worthless without education.—Even a bounteous harvest in a fertile section would avail little for an illiterate people who could not build the engines or boats to transport it, or understand the processes necessary for its preservation against a future day of want. Without the knowledge of chemistry and metallurgy, rich mineral deposits are but so much worthless rock. Without tools and machinery and educated skill to turn them into houses, furniture, and implements for man, vast timber resources are but so many trees cumbering the soil; without educated brain and skilled hands the fertile soil, timbered land, water power, and mineral deposit must forever lie idle or be ignorantly squandered.

Comparison of illiterate and educated workers.—Horace Mann vividly pictures the power of education in his statement about the savage and transportation. Modifying his statement, it can be said: The savage can fasten only a dozen pounds on his back and swim the river. When he is educated enough to make an axe, fell a tree, and build a raft, he can carry many times a dozen pounds. As soon as he learns to rip logs into boards and build a boat, he multiplies his power a hundredfold; and when to this he adds mathematics, chemistry, physics, and other modern sciences he can produce the monster steel leviathans that defy wind, storm, and distance, and bear to the uttermost parts of the earth burdens a millionfold greater than the uneducated savage could carry across the narrow river.

¹ Report on taxation, Proceedings and Addresses, Nat. Educ. Assoc., July, 1905, pp. 27-28:

"In India only 5 per cent can read and write, and there the men receive for farm work, in the Madras district, 6 to 8 cents a day; women, 4 to 6 cents; children, 3 to 5, the laborers boarding themselves" (pp. 6 and 16).

"If Asia had a Panama Canal to dig, she would dig it with picks, hoes, and spades, and tote out the earth in buckets. Nothing but human bone and sinew would be employed, and the men would be paid little, because without tools and knowledge they must always earn little. But America puts brains, science, steam, electricity, machinery into her Big Ditch—tools and knowledge, in other words, and she pays good wages because a man thus equipped does the work of 10 men whose only force is the force of muscle."—"Asia's Greatest Lesson for the South," Clarence H. Poe, pp. 10-11.

The efficiency of an illiterate people in competition with an educated nation is as the crooked stick against the sulky plow; the sickle against the reaper; the bullock cart against the express train, the ocean greyhound, and the aeroplane; the pony messenger against the telegraph, telephone, and wireless; the individual harangue against the printing press, the newspaper, the library; the spinning wheel against the factory; the pine fagot against the electric light; the peddling of skins and herbs from the oxcart against the bank, the check book, the railroad, the department store; the log hut against the steel skyscraper; the unaided eye against the microscope and telescope; incantations and magic against the chemist, the hospital, the modern physician and surgeon. Take away from one entire generation all education, and society must revert to the stick plow, the oxcart, and such primitive means, because steel implements, locomotives, steamships, electricity, telephones, telegraph, waterworks, steel buildings, mining and chemical industries, factories, modern sanitation, hygiene and medicine, books, newspapers, courts of justice, and laws that protect property and defend the rights of the weak are all impossible without education and are efficient only in proportion as educated intelligence is applied to them.¹

The necessity for education rapidly increasing.—The necessity for education has increased and will continue to increase with the advance in the complexity of the processes of civilization. Because of the unparalleled progress in the arts and sciences during the past fifty years the need for education has in a generation multiplied many fold. For example, a century ago a transportation system was little more than a wagon and a driver who knew the road. Now, in handling a problem of transportation, experts in traffic must first determine whether a road in that place will be worth while, and what kind of road will be most economical and efficient; experts in finance must provide the tremendous sums needed to build the road; civil engineers must lay it out; bridge engineers plan the bridges; chemical engineers test the materials; mills and factories with scores of chemical and physical experts make the rails, build the locomotives and steel cars; and a host of traffic experts, auditors, accountants,

¹ The advantage to each of the education of all is admirably brought out in the following paragraph from Mr. Clarence Poe: "You prosper just in proportion to the prosperity of the average man with whom you are brought into business contact. If the masses of the people are poor and ignorant, every individual, every interest, every industry in the community will feel and register the pulling-down power of their backwardness as inevitably as the thermometer records the temperature of the air. The merchant will have poorer trade, the doctor and lawyer smaller fees, the railroad diminished traffic, the banks smaller deposits, the preacher and teacher smaller salaries, and so on. Every man who through ignorance, lack of training, or by reason of any other hindering cause, is producing or earning only half as much as he ought, by his inefficiency is making everybody else in the community poorer."—"Asia's Greatest Lesson for the South," Clarence H. Poe, pp. 3-4.

and specially trained managers and clerks, telegraphers, engineers, conductors, and others keep the trains moving with safety and with profit. In like manner the farmer can no longer merely exhaust one fertile piece of fresh soil after another by crude methods of agriculture. Intelligent rotation must be planned, soil must be conserved and built up, improved stock and seed must be bred; methods of cultivation that stimulate growth and conserve moisture and fertility must be practiced; markets must be studied and considered in planting; new methods of marketing must be used, accounts must be kept, and homes must be made healthful. If this is not done the landowner will soon lose his land and become a tenant and the tenant become a day laborer. In law, in medicine, in teaching, in manufacturing, in trade and industry of all kinds, this same increased demand for education is found.

A banker's opinion.—Speaking in 1905 at Girard College, Mr. Vanderlip said:

The mental equipment of a business man needs to be greater to-day than was ever before necessary. Just as the sphere of the business man's actions has broadened with the advent of rapid transportation, telegraphs, cables, and telephones, so have the needs of broad understanding of sound principles increased. It was steam processes of transportation and production that really made technical education necessary. The electric dynamo created the demand for educated electrical engineers. So the railroad, the fast steamship, the electric current in the telephone and cable, and the great economic fact of gigantic and far-reaching business combinations are making the science of business a different thing from any conception of commerce which could have been had when Girard was the most successful of business men. The enlarged scope of business is demanding better trained men, who understand principles. New forces have made large scale production, and we need men who can comprehend the relation of that production in the world of markets. There has been introduced such complexity into modern business and such a high degree of specialization that the young man who begins without the foundation of an exceptional training is in danger of remaining a mere clerk or bookkeeper. Commercial and industrial affairs are conducted on so large a scale that the neophyte has little chance to learn broadly, either by observation or experience. He is put at a single task; the more expert he becomes at it the more likely it is that he will be kept at it, unless he has had a training in his youth which has fitted him to comprehend in some measure the relation of his task to those which others are doing.

Business growing more complicated.—An excellent illustration of the manner in which modern business has widened the scope of its demands for training and broad education is given by J. T. Young in speaking of several modern industries:¹

The production of oil has led to an especially interesting series of auxiliary enterprises. Crude and refined oil, petroleum jelly, gas, gasoline, and light oils, fine and heavy lubrication oils, wax, paraffin, chewing gum, oil cake,

¹ *Annals Amer. Acad. Pol. and Soc. Sci.* 28, pp. 28-37, "Business and Science," by J. T. Young.

barrels, tin cans, bags, and wooden boxes are all manufactured in the various departments and plants of the industry. In addition, it has proved profitable to own and operate banks, steamship lines, and various other commercial undertakings.

In gas manufacture, tar, briquettes, light oils, dyes, creosote, and coke are resultant by-products leading to the development of new markets and new departments of business. The most successful meat-packing concerns have been directed by men who are able to develop extensive "allied" industries. Besides the usual dressed fresh, canned, dried, and smoked meats, the packing interests manufacture soups, meat extracts, sausage, lard, toilet, laundry, and wool soap, gelatin, pepsin, glue, fertilizer, etc., and operate printing establishments, can, box, and paint factories, extensive refrigerator car lines, and meat, fruit, and vegetable refrigerating plants. In addition to the manufacturing side of the business, a wholesale organization has been built up which distributes some of the products throughout practically the entire domestic market.

The manager of a modern business enterprise of any size must be able to trace the exact cost of production of each article, study the markets of the world in order to make wise contracts for sale and purchase, must know how to advertise economically and create or increase his market, must be able to organize and reorganize the departments of his plant, borrow money advantageously, secure favorable transportation rates, stop wastes, work up by-products, and do many other things that were unknown a few years ago. Without the wide use of former waste products, few large enterprises could now maintain themselves. Indeed, so carefully have these been studied that the by-products are at times the chief source of profit, in some cases modern science turning what was formerly a source of trouble and expense into one of great revenue, as was the case in the turning of the injurious sulphur fumes given off in smelting into sulphuric acid. The Tennessee Copper Co., of Copper Hill, Tenn., several years ago was sued for heavy damages by owners of neighboring land because the sulphurous fumes given off by the plant did great injury to the trees and other vegetation around. The expert chemist was called in, and he, by his superior education, was able not merely to stop the injury to the vegetation but to convert these sulphurous fumes into sulphuric acid, one of the profitable by-products of the smelter.

EDUCATION AND INDIVIDUAL SUCCESS.

Who's who in America.—That national wealth and industry are dependent primarily on education and must in the nature of things become more and more dependent thereupon as civilization advances is now so obvious that further illustration is unnecessary. That individual education is an equally vital factor in individual efficiency and success in the varied walks of practical life is a matter about which the facts are not so obvious, as the occasional large successes of com-

paratively unschooled men and the not infrequent failures of men of much schooling have attracted disproportionate attention and obscured the more significant facts. But in recent years several studies have been made which show the influence of education upon individual success.

An investigation of the educational advantages enjoyed by the eight thousand persons mentioned in "Who's Who in America," for the years 1899-1900, brought out the following facts:¹ Out of the nearly five million uneducated men and women in America, only 31 have been sufficiently successful in any kind of work to obtain a place among the 8,000 leaders catalogued in this book. Out of thirty-three million people with as much as a common-school education, 808 were able to win a place in the list, while out of only two million with high-school training, 1,245 have manifested this marked efficiency, and out of one million with college or university training, 5,768 have merited this distinction. That is to say, only one child in one hundred and fifty thousand has been able in America, without education, to become a notable factor in the progress of his State, while the children with common-school education have, in proportion to numbers, accomplished this 4 times as often, those with high-school education 87 times as often, and those with college training 800 times as often. If this list had been selected by the universities or school-teachers, or if literary leaders only were chosen, it might easily be claimed that the apparently greater success of the educated was due to the line of work from which the leaders were selected. But the selection of the men and women in this book was not in the hands of professors, but in the hands of a firm of business men. They selected leaders in all lines of industry, commerce, agriculture, and other fields of practical endeavor besides the professions, and still this enormously increased efficiency and productivity of those with education was found.

In interpreting the results of this study, as in the interpretation of all of the following comparative studies of those who have education with those who do not have it, let it be understood that the remarkable superiority of the educated must not be attributed entirely to their education. Those who receive education are a selected lot to begin with. Their parents were, as a rule, persons of more than average efficiency, and hence were able to keep their children in school; they were more intelligent than the average, and therefore induced or required their children to remain in school. The child himself probably had more than average ability, else he would have wearied of the intellectual labor of the school and would have left it

¹ "Who Are the Eight Thousand?" a study by W. W. Smith, chancellor of the Randolph-Macon system. Similar statistics given in "Who's Who in America," p. xix, for 1910-11, and covering 15,794 notable Americans, show results "nearly identical" with those for 1899-1900.

DISTINGUISHED MEN OF AMERICA AND THEIR EDUCATION

**WITH NO SCHOOLING
OF 5 MILLION, ONLY 31 ATTAINED DISTINCTION**

**WITH ELEMENTARY SCHOOLING
OF 33 MILLION, 808 ATTAINED DISTINCTION**

**WITH HIGH-SCHOOL EDUCATION
OF 2 MILLION, 1245 ATTAINED DISTINCTION**

**WITH COLLEGE EDUCATION
OF 1 MILLION, 5768 ATTAINED DISTINCTION**

**THE CHILD WITH NO SCHOOLING HAS ONE
CHANCE IN 150,000 OF PERFORMING DIS-
TINGUISHED SERVICE; WITH ELEMENTARY
EDUCATION, HE HAS FOUR TIMES THE CHANCE;
WITH HIGH-SCHOOL EDUCATION, 87 TIMES THE
CHANCE; WITH COLLEGE EDUCATION, 800 TIMES
THE CHANCE.**

WHAT IS YOUR CHILD'S CHANCE?

FROM
"THE MONEY VALUE OF EDUCATION"
BY W. W. SMITH, Ph.D.
NUMBER OF
THE DISTINGUISHED MEN
AMONG THE MEN OF AMERICA

FIG. 8.

The figures are taken from a study of the distinguished men catalogued in *Who's Who in America* entitled "Who Are the Eight Thousand," by W. W. Smith.

early. Then, too, the child of educated and well-to-do parents has more opportunity offered him to enter lucrative positions. Other influences also doubtless modify the result; but after due allowance for all these factors is made there remains still a large margin of superior efficiency on the part of the educated that one must credit to education or do violence to common sense in interpretation of the undisputed facts.

The college-bred man in business and in politics.—Dr. Charles Thwing made a similar study of the 15,142 eminent men mentioned in Appleton's Encyclopedia of American Biography to find the facts especially with regard to the relation between college training and success in political life and in amassing wealth.¹

Of the 100 wealthiest men in the United States he found that in proportion to the total number in America possessing a college education there were 277 times as many college-bred men who had amassed great wealth as there were of noncollege-bred men. In proportion to their numbers in the population, the college men have become Members of the National House of Representatives 352 times as often as the noncollege-bred men; Members of the Senate 530 times as often; President 1,392 times as often; Justices of the Supreme Court 2,027 times as often. Of the more than 10,000 prominent and successful men in all lines mentioned who were still living, 58 per cent were college graduates and 75 per cent had had some college training. On the whole, the college-bred man had attained enough eminence to be mentioned in such a cyclopedia 870 times as often in proportion to his number as the noncollege-bred man.

In 1898 Prof. J. C. Jones, of the University of Missouri, made a special study of the college graduate's success in the field of national politics. This study is doubly pertinent to this subject, for not only do Congressmen, Cabinet officers, Supreme Court judges, and Presidents receive larger salaries than do average citizens, but, since they make, interpret, and enforce the laws which govern customs, banking, transportation, corporations, policing, and international relations, they exert a powerful and wide-spread influence upon national industry and wealth. Prof. Jones made his study² also through an examination of Appleton's Cyclopedia of American Biography, but considered only those who had remained in college long enough to graduate instead of including, as President Thwing had done, all who attended college. Prof. Jones found that over five thousand of the fifteen thousand men mentioned in Appleton's were college graduates. He also investigated the schooling of the Fifty-fourth and Fifty-fifth Congresses and found that 36 per cent of the Representatives and over 36 per cent of the Senators were college graduates.

¹ Amer. Ed. Rev., November, 1908.

² "Does College Education pay?" by J. C. Jones, Forum: 26, No. 354-363; Nov., 1898.

Among those who have been elected to the position of Speaker of the House, 47 per cent have been graduates. Furthermore, the proportion is increasing. From 1789 to 1841 the percentage of Speakers who were graduates was 35, whereas from 1841 to 1898 it was 55. Of the Presidents, 55 per cent had likewise been graduates, this percentage also having increased during the preceding 75 years from 50 to 57. Fifty-four per cent of the Vice Presidents, 62 per cent of the Secretaries of State, 50 per cent of the Secretaries of the Treasury, 67 per cent of the Attorneys General, 69 per cent of the Justices of the Supreme Court (87 per cent during the preceding 50 years) were college graduates. As only about 1 per cent of the population ever graduate from college, it is plain that the graduates attain these remunerative and important positions from 36 to 87 times as often as the nongraduates, and that this ratio is still increasing.

The education of the men who framed the Constitution.—As no other one political event has had more to do with national peace and stability, and hence with industrial possibilities, than the framing and adoption of the Constitution, especial significance is attached to the results of Prof. Jones's study of the part which the 1 per cent of college graduates in the country played in this important matter. He found that the author of the Constitution, Thomas Jefferson, was a college graduate; its ablest defender, John Adams, was a college graduate; 23 of the 54 who composed the convention were college graduates, and 27 were college-bred men; 2 of the 3 who brought about the convention—Madison and Hamilton—were college graduates, while the third—Monroe—was a college man; the authors of three of the four plans presented—Madison, Hamilton, and Patterson—were college graduates; the plan finally adopted was that of a college graduate; and after its final adoption the three men who led in explaining it, defending it, and securing its adoption by the States were all college graduates—Madison, Jay, and Hamilton. In fact, the 1 per cent of college graduates in America can almost be said to have called the convention, written the Constitution, and secured its adoption and ratification.

Education and the development of a Western State.—Following quite a different method, Mr. H. E. Kratz made an investigation of the part being played by college-bred men in the recent development of one of the Western States. Mr. Kratz asked men in 15 leading South Dakota cities to name the five leading men in their cities in seven different lines, viz, law, medicine, teaching, the ministry, banking, journalism, merchandising, and manufacturing. Of the 533 men whose names were sent in as leaders in these cities in the several lines, 293, or 50 per cent, proved to have had as much as two years of college training.¹

¹ "Does College Education Pay?" by H. E. Kratz, in *Educ. Rev.*; 27, 298-99; Mar., 1899.

EDUCATION & STATESMANSHIP



**LESS THAN 1% OF AMERICAN MEN ARE
COLLEGE GRADUATES, YET THIS**

1% OF COLLEGE GRADUATES HAS FURNISHED

55% OF OUR PRESIDENTS

36% OF THE MEMBERS IN CONGRESS

47% OF THE SPEAKERS OF THE HOUSE

54% OF THE VICE-PRESIDENTS

62% OF THE SECRETARIES OF STATE

50% OF THE SECRETARIES OF TREASURY

67% OF THE ATTORNEYS GENERAL

69% OF THE JUSTICES OF THE SUPREME COURT



**50% OF THE MEN COMPOSING THE CON-
STITUTIONAL CONVENTION WERE COLLEGE BRED.**

FROM
"THE MONEY VALUE OF EDUCATION"
BY J. C. JONES, PH.D.

ILLUSTRATION BY
THE UNIVERSITY OF TEXAS
LIBRARY OF ARTS

FIG. 4.

The figures are from "Does College Education Pay?" by J. C. Jones in the *Forum*, 26, pages 354-363. The Presidents include all to 1914. The congressional figures are for the Fifty-fourth and Fifty-fifth Congresses. Later Congresses would probably show a larger proportion of college men, as they are more prominent now than in former years in public life. The other figures are to date of the article.

FINANCIAL RETURN OF EDUCATION TO THE INDIVIDUAL.

Individual salary and value to society.—The financial returns which different grades of education make to the individual have been studied recently by two different methods. In some of the studies the investigators went into the factories and other enterprises and found out the amount of schooling that the successful employees in the several grades of work had had. In others they followed out into life the graduates of certain schools and colleges to see what kinds of positions they proved competent to fill and what salaries they received from year to year. The salary paid to an individual because of certain educational qualifications possessed by him represents not only the financial value of that education to him, but also in a general way represents the financial value which the community places upon the service made possible by that education. Some of the results are as follows:

Dodge's study.—One of the earliest of these studies was made by Mr. James M. Dodge, one of the prominent manufacturers of America and former president of the American Society of Mechanical Engineers.¹ Mr. Dodge calculated the financial value of different grades of education by comparing the earning capacities of common laborers, shop-apprentice trained men, trade-school graduates, and technical-school graduates who were employed in the several large factories under his observation. He capitalized at 5 per cent the average annual earnings of 50 weeks of work of a member of each of these classes, and took this sum as the potential value of each when making his comparisons. He concludes:

A chart thus obtained shows that the laborer starts with \$3 a week when he is 16, and rises to \$10.20 by the time he is 21, but he rises no higher. His potential value at that wage is \$10,200. The apprentice or shop-trained worker starts with the same wages as the laborer at 16, but rises more rapidly, and is earning by the time he is 24 years old \$15.80. His potential value at that time is \$15,800, but he makes no further rise. The trade-school graduate, starting at the same point, rises still more rapidly, and is earning when he is 25 years of age \$22 per week, his potential value at this point being \$22,000. From this point his wages rise less rapidly, reaching possibly \$25 per week at the age of 32, and representing a potential value of \$25,000. The graduate of the technical school starts at the same point of a weekly salary of \$3, and is earning \$4 when he enters college at 18. Upon graduating from college at the age of 22 he can draw a salary of \$13 per week. He has then already passed the laborer, but is still a little below the shop-trained apprentice. He passes the latter, however, during his first year of employment, but is still below the trade-school graduate, whom he does not overtake until his twenty-fifth year. From this point on he rapidly leaves behind the other three workers, and at the age of 32 is drawing \$43 a week, his potential value being \$43,000. Thus, four years' training at a technical school makes a man, by the time he is 32, four

¹ "The Money Value of Technical Training," J. M. Dodge, in the Transactions of Amer. Soc. of Mechan. Engineers, vol. 25.

VALUE OF EDUCATION TO FACTORY WORKERS



TECHNICAL SCHOOL GRADUATE

\$43.000

TRADE SCHOOL GRADUATE

\$25.000

SHOP APPRENTICE

\$15.800

LABORER

\$10.200



**THE "VALUE" OF EACH IS CONSIDERED TO
BE THE SUM WHICH AT 5% INTEREST
WOULD YIELD AN INCOME EQUAL TO THE
SALARY RECEIVED.**

WHICH WILL YOU BE ?

FIG. 5.

The figures are from "The Money Value of Technical Training," by J. M. Dodge, in the Transactions of the American Society of Mechanical Engineers, volume 25, pages 40-48.

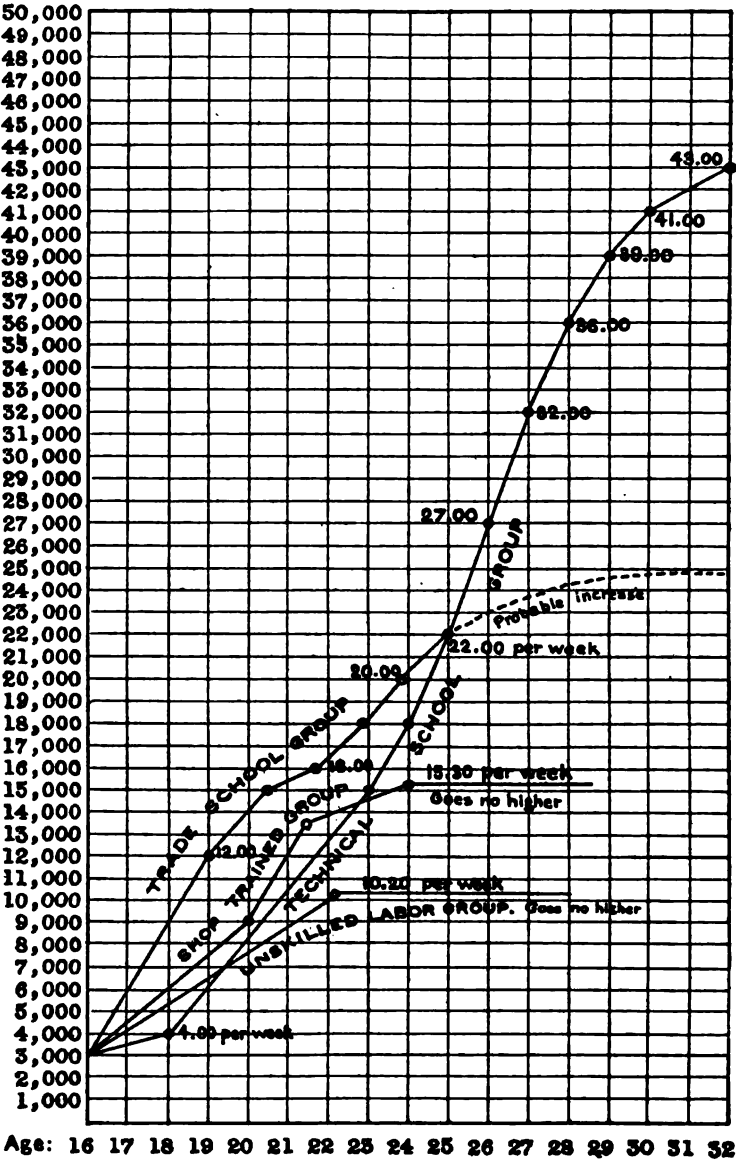


FIG. 6.

Charting the value of education to the factory worker. (See also Fig. 5.)

times as valuable as the laborer, approximately three times as valuable as the shop-trained apprentice, and 72 per cent more valuable than the trade-school graduate—surely a good return for four years spent in preparation.¹

Mr. Dodge found that even in the lowest grades of factory work the uneducated laborer was often unsuccessful. Only 35 per cent of the unskilled remained in the factory even in unskilled work, 5 per cent went somewhat higher, while 40 per cent had to be dismissed and 20 per cent left of their own accord for one cause or another.

It has been objected to this study that the factories under Mr. Dodge's supervision were not typical ones, but that in them a value was placed upon education above that allowed in other factories. That this is not true is shown by the fact that the salaries reported for the trade-school graduates in the Dodge factories are actually lower than those received in various other factories by the graduates of three widely separated trade schools reported by O'Leary.²

The educated fail less often.—Another study of the actual performance of educated men in the business world was made by H. J. Hapgood. Mr. Hapgood's results were similar to those of Dodge and brought out especially the large per cent of successes among college-bred men in responsible, high-salaried positions, and the comparatively small per cent of successes on the part of the non-college-bred men. He says:

A notable instance of the value of college men is furnished by the Western Electric Co., which began employing college men about 10 years ago, and has found that 90 per cent of them make good, as compared with 10 per cent of the men who enter business on leaving the high or grammar school.³

Statistics based on data gathered from the experience of 100 business houses and covering a period of three or four years show that about 90 per cent of the college men were successful in rising to large salaries and responsible positions, as compared with 25 per cent of the noncollege men.

There is no doubt that college graduates are the chief and best source of supply for the reserve force which every progressive firm should be accumulating.⁴

Factory workers' salaries and education in Massachusetts.—The Massachusetts committee on industrial education made a study of 799 workers who had left school at either 14 or 18 years of age and traced the actual average salaries received by these workers from

¹ In a private letter to Prof. Person, of Dartmouth College, Mr. Dodge gives this additional information:

"The data of my address on the money value of training were obtained by investigating the records of the Link Belt Engineering Co. and the Dodge Coal Storage Co., the records covering a period of about 14 years. I then had the figures compared with such records as I could obtain from my friends in somewhat similar lines of business, and, for fear of being in error, made a reduction of about 10 per cent from what the actual statistics show."—Quoted by W. A. O'Leary in his report on "The Wage Value of Vocational Training," Appendix VI of the Fourth Report of the New York State Factory Investigating Commission, p. 1420.

² O'Leary, W. A. *The Wage Value of Vocational Training*, p. 1423.

³ *Annals Amer. Acad. Pol. and Soc. Sci.*, July-December, 1906, pp. 62-63.

⁴ *Ibid.*, p. 64.

WHAT INDUSTRIAL EDUCATION PAID 215 BOYS



THE SOLID BLACK COLUMNS REPRESENT THE AVERAGE YEARLY WAGE RECEIVED BY 584 CHILDREN WHO LEFT SCHOOL AT 14 YEARS OF AGE.

THE HATCHED COLUMNS REPRESENT THE AVERAGE WAGE RECEIVED BY 215 BOYS WHO REMAINED IN TECHNICAL SCHOOLS TILL EIGHTEEN YEARS OF AGE.

NOTE THAT THE TECHNICAL-SCHOOL STUDENTS SURPASS THE SHOP-TRAINED BOYS FROM THE BEGINNING, AND AT 25 YEARS OF AGE ARE RECEIVING \$900 PER YEAR HIGHER SALARY.

FIG. 7.

The figures were taken from the *Report of the Commission on Industrial and Technical Education*, submitted to the Massachusetts Legislature in 1906.

year to year. They found that boys who had remained four years longer in school in order to take a technical course soon caught up in salary with their brothers who stopped at 14, and went ahead of them so rapidly that by the time they were 22 years old the sum of the four years' salary of the better-educated boys was equal to that of the eight years' salary of those who had quit school at 14. At the age of 25 the boys who had taken four years' extra schooling were on the average getting \$900 per year more than those who left school at 14.

From the twenty-fifth year on, the boys who had quit school at 14 would secure practically no promotion, whereas those who had remained in school till 18, and had therefore entered the higher-grade industries and positions, would continue to receive promotion and increase in salary for many years.¹

If, however, it is assumed that each boy continues for the remainder of his normal working life to receive the same salary that he was paid at 25 years of age, the boy who quit school at 14 would receive a total life income of \$26,667, while the boy that remained till 18 would receive \$58,900. It thus appears that four years of technical education, from 14 to 18 years of age, more than doubles the earning capacity of the average Massachusetts boy engaged in industry and richly repays both him and the State for the time and money devoted to his education.

It is true that the number of children studied by the commission was small, as was the number of industries inspected. Furthermore, the absolute accuracy of the statements of those studied concerning their wages could not always be proved. It would, therefore, be a mistake to suppose that the above figures are to be taken as exact measures of the value of education in industry even in Massachusetts. On the other hand, this committee was composed of some of the ablest educators and most thoughtful men and women in Massachusetts. It employed trained assistants, visited 354 firms, in 55 different industries, in 43 cities, and personally visited 5,459 employees, out of 9,057, between the ages of 14 and 24 years employed by the firms under observation.

Wages of the trained and untrained.—An illuminating comparison was made by Florence Marshall of the wages received by girls in those occupations demanding no training and those that do demand it. The results are graphically shown in Fig. 8.

An investigation by Miss Anna Hedges of the relation between the education and the wages of a number of women in several factories around New York City showed that education through the fourth

¹ The commission found (p. 21) that, out of 9,057 employees studied, 900 of whom were in high-grade industries, only 2 per cent of those who had left school at 14 ever got into high-grade industries.

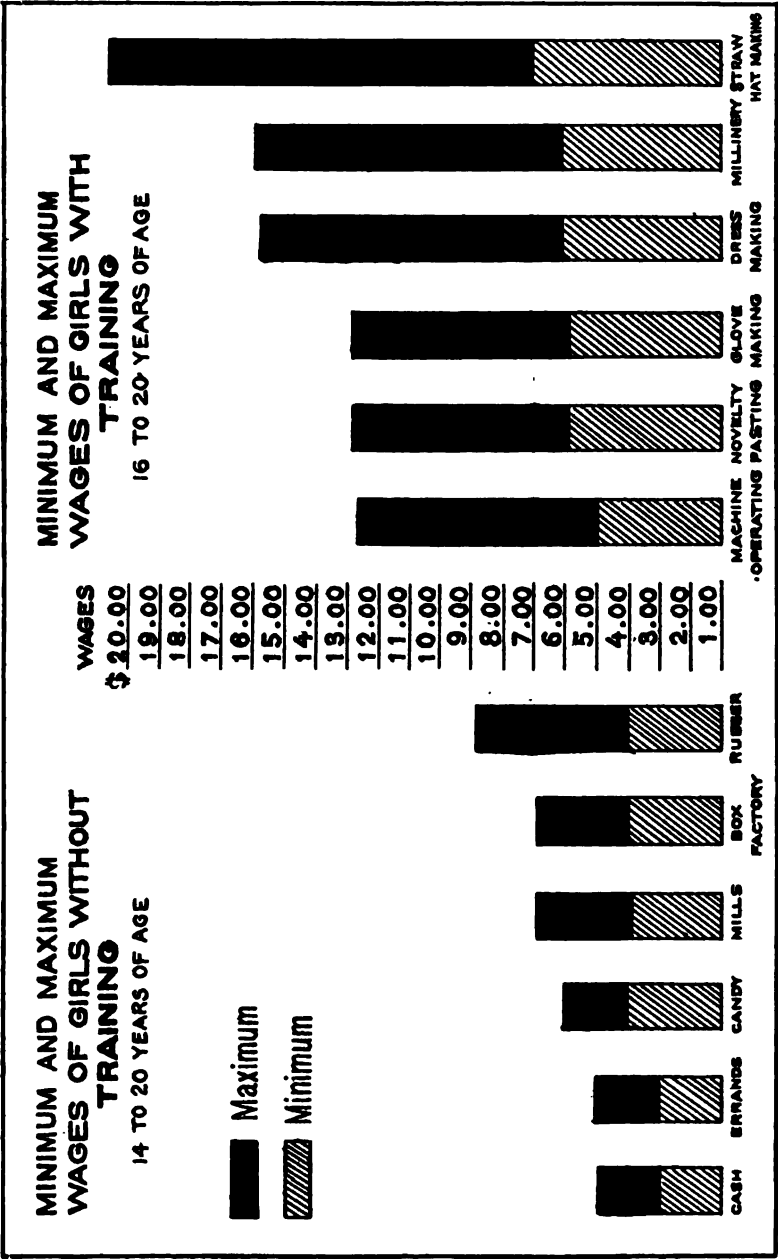


FIG. 8.

Wages of trained and untrained girls. The figures are from "The Public and the Girl Wage Earner, by Florence Marshall, in *Charities and the Commons*, Oct. 5, 1907.

grade increased the wages received by foreign-born girls, but that additional education in the ordinary schools slightly lowered the average earning capacity of these girls in factory work, though it enabled them to reach their maximum salary sooner. This study also showed that the foreign-born girls possessed greater earning power in factory work than the American girls. This apparent reversal of what would be expected is probably due to the low grade of work done by the girls in the factories. For such monotonous routine at machines it is probable that the brighter mind and broadened interests produced by education are a disadvantage. Furthermore, the girls who go into factory work after having many years of schooling are probably below the average in native ability. Miss Hedges says: "High-school preparation turns the attention of most girls to lines of work other than those found in the factory. Those who drift into the factory have perhaps been failures elsewhere."¹

Education and salaries in New York City.—A committee of the Brooklyn Teachers' Association² investigated the salaries received by graduates of the elementary schools and by others who stopped school before graduation. Of 192 boys from the elementary schools taken at random, the committee was able to trace 166 till they were about 30 years of age. At that time the average income of these 166 boys was \$1,253.05, whereas the average salary of the illiterate worker in Brooklyn was \$500 per year. If the parents of these 166 boys had bought each of them an annuity equal to the extra \$753 per year, which his education enabled him to earn, it would have cost over \$15,000 per boy. As the salaries of these boys will rise considerably after they are 30, while those of the illiterate laborers will not, it is obvious that this elementary education was worth more than a \$15,000 capital safely invested for each boy.

Of 1,600 pupils in the night schools this committee found that wages were being received by them as follows:

Wages received by 1,600 pupils in New York City night schools.

Grade on leaving school.	Average age at leaving school.	Average age at present.	Average wages now.	Number years have worked.
Below 8B.....	13.3	18.8	\$469	5.4
Below 8A.....	14.1	18.4	424	3.6
First-year high school.....	15.0	17.0	435	2.0
Second-year high school.....	15.6	14.0	466	2.4
Third-year high school.....	15.9	18.0	503	2.1

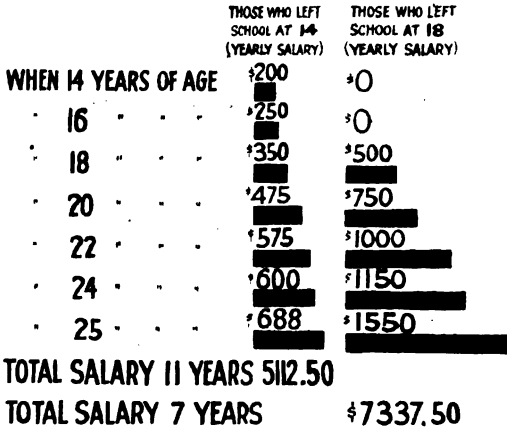
From the above table it is seen that the pupils who remained through the high school were already, at the end of two years, receiv-

¹ Wage Worth of School Training, by Anna Hedges, p. 143.

² Report of the committee on Incentives, in the report of the president of the Brooklyn Teachers' Association, 1909.

WHAT FOUR YEARS IN SCHOOL PAID

WAGES OF TWO GROUPS BROOKLYN CITIZENS



NOTICE THAT AT 25 YEARS OF AGE THE BETTER EDUCATED BOYS ARE RECEIVING \$900 PER YEAR MORE SALARY, AND HAVE ALREADY, IN 7 YEARS, RECEIVED \$2250 MORE THAN THE BOYS WHO LEFT SCHOOL AT 14 YEARS HAVE RECEIVED FOR ELEVEN YEARS' WORK.

IT PAYS TO CONTINUE YOUR STUDIES

FIG. 9.

The figures represent the average of actual salaries received by two groups of children that left school at 14 and 18 years of age, respectively, and were investigated by the *Committee on Incentives* of the Brooklyn Teachers' Association.

ing more salary than those who quit at the eighth grade were receiving after more than five years' work. This is especially significant, as these pupils who left at the eighth grade showed that they were pupils of more than average energy and ambition, in that they, five years after leaving school, were still attending night school trying to improve themselves. Their comparatively slow rise in salary is therefore not to be accounted for by laziness or stupidity, though this may with justice be used to account for some part of the inability to succeed usually shown by the illiterate as compared with school graduates.

This same committee compared the earnings of the children who left school at 14 years of age with those of the children who remained until they were 18 years old. The average weekly earnings were as follows:

Comparison of wages of children who left New York City schools at 14 years of age with those who left at 18 years of age.

	Left school at 14.	Left school at 18.
Weekly salary when—		
14 years of age.....	\$4.00	0
15 years of age.....	4.50	0
16 years of age.....	5.00	0
17 years of age.....	6.00	0
18 years of age.....	7.00	10.00
19 years of age.....	8.50	10.75
20 years of age.....	9.50	15.00
21 years of age.....	9.50	16.00
22 years of age.....	11.75	20.00
23 years of age.....	11.75	21.00
24 years of age.....	12.00	23.00
25 years of age.....	12.75	31.00
Total salary till 25 years of age.....	5,112.50	7,337.50

It is seen that already, at 25 years of age, the boy who had remained in school till he was 18 had received about \$2,000 more salary than the boy who left at 14, and was then receiving over \$900 per year more. From this time on the salary of the better educated boy will rise still more rapidly. However, reckoning the average difference in salary at only \$900 per year, this equals an annuity that would cost \$19,000 if bought from a reliable insurance company—not a bad return for four years of youth devoted to the school.

The committee of Brooklyn teachers also looked into the schedule of salaries paid for various kinds of work which demanded different grades of education. In 2,394 bakery establishments employing 12,000 males over 18 years of age, but requiring only the most elementary education, the average salary paid was \$657 per year, whereas in the city departments demanding education equal to that given by a commercial high school the average salary of 1,579 employees was \$1,597. In the bridge department of New York City the average pay of 180 men, with an average service of nine years,

DOES EDUCATION PAY?

SALARIES IN THE NEW YORK BRIDGE DEPARTMENT



IN POSITIONS DEMANDING ONLY READING,
WRITING, AND ARITHMETIC **\$982⁰⁰**



IN POSITIONS DEMANDING HIGH-SCHOOL AND
COMMERCIAL COURSES **\$1729⁰⁰**



IN POSITIONS DEMANDING HIGH-SCHOOL
AND TWO OR THREE YEARS OF COLLEGE OR
TECHNICAL EDUCATION **\$2400⁰⁰**

WHICH POSITION ARE YOU PREPARING
YOURSELF TO FILL?

**IT PAYS
TO CONTINUE YOUR EDUCATION.**

FIG. 10.

The figures are from the "Report of the Committee on Incentives" in the *Report of the Brooklyn Teachers' Association for 1909*.

in work demanding no education beyond reading and writing and a little arithmetic, was \$982 per year. In the clerical positions demanding the equal of a commercial high-school education the average salary of 31 persons with an average service of 13 years was \$1,720 per year. In the engineering department, where high-school graduation and three or four years of college or technical school education were demanded, the average salary of 134 persons with an average service of 7 years was \$2,400 per year.

Springfield high-school graduates' salaries.—In 1908 a study was made of the graduates of the commercial department of the Springfield (Mass.) High School from the first class of 1900 to that of 1907. Of the 76 graduates, 67 were followed up completely. The salaries of these graduates are shown in the table below. From this table it is seen that these graduates went out into business at an average salary of about \$400, but rose rapidly at an average increase of about \$116 per year, those who were out as long as seven years averaging at that time more than \$1,000 each year. These salaries will, of course, continue to rise for several years yet.

Salaries of graduates commercial department Springfield (Mass.) High School.¹

Class	Average salary first year.	Average salary, 1908.	Average yearly increase in salary.	Years since graduation.
1900.....	\$308.50	\$1,100.00	\$105.53	7.5
1901.....	426.40	994.40	87.39	6.5
1902.....	321.20	969.80	117.93	5.5
1903.....	368.67	891.33	116.15	4.5
1904.....	379.14	813.00	123.91	3.5
1905.....	517.33	735.33	87.20	2.5
1906.....	381.33	617.33	153.33	1.5
1907.....	392.64	461.00	136.72	.....
Average annual increase.....	.....	.....	116.52	.....

¹ High-School Graduates in Business, Sch. Jour., 75: 780, June, 1908.

Every day at school worth nine dollars.—The Springfield and Brooklyn studies represent a fair average of what may be expected as a result of a good school system. The increase above \$1,000 in salary of later years will more than compensate for the first few years in which the salary is below this figure. The life expectancy of the average high-school boy is more than 40 years. If we take this average annual salary of \$1,000 for a period of 40 years and compare it with the illiterate laborer's salary of \$500 per year for the same length of time, we can see how richly the child and the community are repaid for each day the child attends school.

\$1,000 for 40 years equals.....	\$40,000
\$500 for 40 years equals.....	20,000
Difference.....	20,000

EVERY DAY SPENT IN SCHOOL PAYS THE CHILD NINE DOLLARS

\$9.02 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$9.02

HERE IS THE PROOF:

UNEDUCATED LABORERS EARN ON THE
AVERAGE \$500 PER YEAR FOR FORTY
YEARS, A TOTAL OF \$20,000

HIGH-SCHOOL GRADUATES EARN ON
THE AVERAGE \$1000 PER YEAR FOR
FORTY YEARS, A TOTAL OF \$40,000

THIS EDUCATION REQUIRED 12 YEARS
OF SCHOOL OF 180 DAYS EACH, A TOTAL
OF 2160 DAYS IN SCHOOL.

IF 2160 DAYS AT SCHOOL ADD \$20,000
TO THE INCOME FOR LIFE, THEN EACH DAY
AT SCHOOL ADDS \$9.02.

\$9.02 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$9.02

THE CHILD THAT STAYS OUT OF SCHOOL
TO EARN LESS THAN \$9.00 A DAY IS
LOSING MONEY, NOT MAKING MONEY

\$9.02 \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$9.02

FIG. 11.

Twelve years of 180 days each, or a total of 2,160 days of school, bring the child, therefore, an added life income of \$20,000, or a return of between nine and ten dollars for each day spent in school.

Education and earning power in Wisconsin.—Mr. O. B. Staples made a study of the amount of schooling and of the incomes of 500 adults, representing 75 per cent of the population of Lake Geneva, Wis.¹ Of those who had had less than five years of schooling only 22 per cent had an income of over \$700 per year, while of those who had had as much as nine years of schooling over 77 per cent were making over \$700 per year. This was in spite of the fact that many of those who had attended school for nine years or more were women, who for the same work are paid lower salaries than men, and young high-school graduates who had not been long out of school and hence were just getting a start.

Earning power of Minneapolis school children.—Supt. B. B. Jackson, of Minneapolis, studied the earnings of 3,345 pupils who left school at the end of the eighth grade and found that they started life with an average salary of only \$240 per year. A similar study made by him of the salaries of 912 graduates of the high school showed that they started out with an average salary of \$600 and after six years were earning an average of \$1,380.²

Education and farm income in New York.—Warren and Livermore, of Cornell, made a study of 1,303 farmers in four townships of Tompkins County, N. Y. They found that no college graduate had been reduced to the position of a renter, and that only 17 per cent of the renters had more than the district-school education. The average labor income was as follows:

	Per year.
Of 1,007 with district-school education.....	\$318
Of 280 with high-school education.....	622
Of 16 with college education.....	847

Of those with high-school education, 20 per cent were making over \$1,000 per year, while only 5 per cent of those with district-school education were making that much.³

Education and farm income in Indiana.—"A Farm Management Survey of Three Representative Areas in Indiana, Illinois, and Iowa"⁴ showed that 273 land owners operating farms possessed education and secured labor incomes as follows:

¹ Elementary School Teacher, 10: 261-269, Feb., 1910, "Is there a Relation between the Amount of Schooling and Financial Success in Later Life," by O. B. Staples.

² Quoted in School Education, Nov., 1914, p. 5.

³ "Education of Farmers." In An Agricultural Survey, Cornell University, Bulletin 295.

⁴ Bul. No. 41, U. S. Dept. of Agr., quoted in Rural Manhood, Sept., 1914, pp. 301-303.

Education and labor income of land owners.

Education.	Number studied.	Average size (acres) of farm.	Average capital.	Average labor income.	Average age.
None at school.....	4	91	\$15,039	\$586	55
Common school.....	214	165	27,494	301	51
High school.....	46	206	37,725	651	46
College, etc.....	9	240	48,781	796	53

This table fails to indicate any decided superiority in annual producing power on the part of those landowners with the higher education. The college graduates are \$495 a year ahead of the common-school graduates, but on the other hand they have a capital of \$42,781 each as against \$27,494 for the common-school graduates. The small superiority in income might be due to the superiority in capital. Furthermore, the four totally unschooled men made more on the average than the average made by those with common-school education. Here again the results are not dependable, since four is too small a number to use in getting an average; one exceptional man would put the average far out of place. Then, too, many farm owners put their earnings in improvements to the soil and in up-building the farm, so that the real annual production is not shown by the cash labor income.

In the case of renters this large factor of error would be much reduced and the renter's cash labor income would more nearly represent his actual producing power. In this same survey 247 farm tenants also were studied, with the results shown in the following table:

Education and labor income of land renters.

Education.	Number studied.	Average size (acres) of farm.	Average capital.	Average labor income.	Average age.
None at school.....	4	118	\$1,650	\$680	49
Common school.....	186	167	2,200	742	38
High school.....	51	190	3,203	1,268	33
College, etc.....	6	294	3,351	1,721	41

In this case the superior labor incomes of those with better education are very noticeable, and especially so the superiority of the much younger high-school graduates over the unschooled and over the common-school graduates. While the high-school graduates have a larger average capital and work larger farms, this difference is hardly enough to account for the superior earning power shown by the high-school graduate in farming. The number of college graduates and of illiterates is too few to serve as a basis for any safe conclusions.

Education helps Missouri farmers.—In 1912 the Missouri College of Agriculture conducted a survey of 656 farms in Johnson County,

Mo. Of these farms, 554 had only a district-school education, while 102 had received more than that. It was found that the better educated farmers operated 33 per cent more land and owned four-fifths of the land they operated, as against three-fifths owned by those with only district-school education; they kept one-sixth more stock, worked 14 per cent more land per workman, and earned 71 per cent more clear labor income per year. Prof. O. R. Johnson, in concluding his report of this survey, says:

While other factors may have played some part in his greater earning capacity, yet from a careful study of the organization of his business it appears that education must have played a very large part in his greater earning ability.

Salaries earned by pupils of Beverly (Mass.) Trade School.—The results of the strictly technical or trade school education have been just as unmistakable as have been those of the schools of general culture. The "Fourth Annual Report of the Trustees of the Beverly Industrial School, 1912," gives the earnings from year to year, as they passed through the school, of the 12 graduates who had spent two and a half years in the school. This school requires as part of its course of study actual piecework in the mills under all the requirements and conditions of ordinary factory work, except the additional instruction given by teachers and the part time devoted to school work. Summing up these results, the secretary says:

The wage-earning capacity of these boys when they entered school is conservatively estimated at \$6 per week * * *. The wage-earning capacity of these boys at the time of graduation ranged from \$15 to \$18 per week. In 120 weeks of shopwork under school directions the boys increased their average earning power in competition with other workmen and under actual factory conditions by more than 250 per cent and were, in fact, earning at the close of the period wages at the rate of \$800 per year.

These final salaries are not estimates, but are actual amounts earned by these boys in the factory working on full time at the end of the school course. That the practical machinists appreciate the value of this school work is shown by the fact that while only 5 machinists and metal workers in 1910-11 sent their sons, 22 sent them in 1911-12, of whom 20 were from one of the big factories in which the school boys had been given part of their practice work.

The Baron de Hirsch Trade School.—This school takes in young men who are already at work and gives them 5½ months of trade education. These young men are usually those who have gone out of the public schools early and found themselves making unsatisfactory progress in industry. The wages of 839 of the graduates of this school were studied and gave the following interesting results:¹ These graduates had entered the school at an average of 17½ years of

¹ Taken from the report of the national commission on vocational education, by W. A. O'Leary in his "Report on the Wage Value of Vocational Training," pp. 1437-40.

age, when they were receiving an average of \$6 per week, with poor prospects of increase. Immediately on graduation they earned on the average \$7.28 per week and within two years were earning \$12 per week, with prospects of more or less steady further increase for 10 or 20 years. One hundred and fifty-eight machinists that entered at an average salary of \$6.66 went back to work after five and a half months of schooling at an average of \$8.96 per week; 66 carpenters that entered at \$6.14 went out at \$9.01 per week; and 270 electricians that entered at \$5.76 went out at \$7.12 per week. Of more value than the 24 to 47 per cent increase in wages resulting from the six months' school training was the great prospect for continued future advance for many years, as opposed to the early maximum salary reached by the untrained.

Graduates of the Milwaukee School of Trades.—The wages received by 25 graduates of the Milwaukee School of Trades who went into the pattern-making industry were investigated and compared with the wages of others who entered this field through apprenticeship. During their four years of apprenticeship the apprentices each received a total of \$1,433.75. During the first two years after leaving the trade school those entering this industry from the trade school received on the average a total of \$1,635.92. It thus appears that before he is 20 years of age the trade-school graduate had received in two years a larger total salary than the apprentice had in four years and was already well ahead of him in the wage scale. The president of the school writes: "I am convinced that if we follow up the experiences of the graduates of the other three trades, we would find even greater advantage gained."¹

Graduates of the New York Vocational School for Boys.—The New York Vocational School for Boys gives only two years' preparatory trade training to 14-year-old boys, or younger boys who have completed the grammar school. The records of the salaries of all the first graduates of this school after six months of employment, as compared with nongraduates working in the same lines, were as follows:

Wages of vocational graduates and nongraduates compared.

Trade. ²	Average wage of graduate.	Average wage of non-graduate.
Architectural and mechanical drawing.....	\$9.50-\$11.50	\$6.50
Carpentry.....	6.00- 11.25	4.74
Machine shop.....	7.50- 13.13	\$4.73- 6.18
Electric wiring.....	8.40- 12.94	5.90- 7.25

¹ Report on the Wage Value of Vocational Training, by W. A. O'Leary, pp. 1426-27.

² Quoted from the report of the principal of the New York Vocational School for Boys for 1911-12, by W. A. O'Leary in his "Report on the Wage Value of Vocational Training," p. 1430.

Graduates of the Rochester Shop School.—The records of 36 graduates of the Rochester Shop School were compared with those of 696 other boys in the same city who left the grammar school at 14 to 16 years of age. The boys are admitted to this shop school at 14 years of age. The 36 spent on the average 14.9 months in the school. The average wage of these shop-trained boys on leaving the school was \$7.50 per week, which rose to \$9.06 by the end of 12.5 months. The untrained boys, on the other hand, averaged only \$4.89 per week during the year and had changed jobs on the average every 17 weeks, whereas the trained boys held their jobs on the average for 12.5 months. Over 95 per cent of the untrained boys were still in the unskilled occupations with no outlet or hope of promotion, whereas 94 per cent of the trained boys were in skilled industries with good prospects of promotion.¹

Earnings of graduates of Lowell Textile School.—The authorities of the Textile School of Lowell, Mass., are quoted in the *American School Board Journal*¹ as follows:

Results of a recent canvass of the alumni lead to the belief that nearly 60 per cent of the graduates from the day classes are receiving a salary of over \$1,000 a year; 20 per cent are receiving \$2,000 a year and over, with some cases of \$4,000, \$5,000, and \$7,000 salaries. The first graduate has not yet been out from the school 10 years.

Earning power of graduates of Newark Evening Technical School.—The New Jersey commission on industrial education in 1908 made a careful study of the salaries of the graduates of the Newark Technical School, which had been in existence long enough (since 1884) to show clearly what was the effect of its training. Definite information as to salaries received was secured from 85 per cent of these graduates. The condition of the other 15 per cent was looked into by the commission enough to convince them that the results secured from the 85 per cent would apply equally well to those from whom they did not get definite replies to their questions. These students carried on remunerative work at the same time that they were studying in this school. The average graduate was found to have begun his work at 14 years of age at a salary of \$3.55 per week, and to have risen rapidly until at 37 years of age the average salary was \$42.03 per week. Those in the machine trades had begun at \$3.76 per week and had gone to \$57.17 per week by the time they were 37 years old.

The United States census at that time showed the average salaries paid in the country to be approximately as follows:

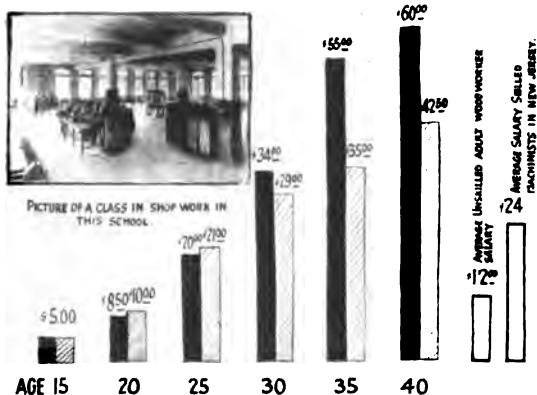
Unskilled machine industries.....	\$8
Unskilled building trades.....	12
Skilled machine trades.....	18
Skilled building trades.....	23

¹ Taken from the report of the board of education of the city of Rochester for 1913, by W. A. O'Leary in his "Report on the Wage Value of Vocational Training," pp. 1430-31.

² May, 1909, p. 25.

WHAT NIGHT-SCHOOL GRADUATES EARNED

WEEKLY SALARIES OF GRADUATES OF
NEWARK EVENING TECHNICAL SCHOOL



THE HATCHED COLUMNS REPRESENT THE AVERAGE SALARY OF ALL GRADUATES; THE SOLID BLACK COLUMNS, THE AVERAGE SALARY OF THE GRADUATES IN MACHINE INDUSTRIES. NOTICE HOW THESE NIGHT-SCHOOL GRADUATES, BEFORE THEY ARE 22 YEARS OLD, SURPASS THE UNSKILLED WORKERS IN SALARIES. AND AT 40 YEARS OF AGE RECEIVE TWICE THE SALARIES PAID THE AVERAGE SKILLED MACHINISTS IN NEW JERSEY.

IS YOUR STATE PREPARING SKILLED INDUSTRIAL WORKERS?

FIG. 12.

The figures are from the *Report of the New Jersey Commission on Industrial Education*. This school was established in 1884. The salaries of 85 per cent of the graduates were secured. Others not secured were thought to be equally good. This is a night school, the students earning salaries in regular work during the day.

Those boys, then, by taking the training offered in that school had made themselves over seven times as valuable as average unskilled machinists and over three times as valuable as average skilled machinists.

Further recognition of the value of education in increasing efficiency is seen in the establishment by the railroads and by numerous large business enterprises at their own expense of special courses, night schools, and day schools for their employees. They have found it impossible to secure from our present inadequately equipped school system the supply of well-educated workers that they need.

Value of education in a railroad shop.—In answer to a question as to what, if any, increase in the value of their workmen had been brought about by a quite complete system of shop trade schools which had been introduced, the representative of a large railroad corporation replied:

We have ascertained that the efficiency of apprentices has increased 25 per cent; that is, on account of our system of instruction they are able to accomplish that much more work than they could before we adopted our present apprentice system. We are, through the medium of our skilled shop instructors, able to use the apprentices on all classes of work, while formerly they were engaged in the simpler classes of work as well as on the simpler machines. Under our present system, however, we are able to use apprentices on any machine, even the most complicated. While we can not measure this in percentage or even dollars and cents, it is a matter of great convenience; especially is it so when a regular man operating some difficult and complicated machine lays off a few days, and it is not economical to put another man in his place on account of not being familiar with the work of the machine; in lieu of which we place an apprentice on the machine and with the help of the instructor he is able to give a fair day's output. In this alone we can save fully 25 per cent.

We have found also that our graduated apprentices' earning capacity has increased 18 per cent over and above those who did not have the advantage of our apprentice instruction. This fact is particularly emphasized by our shop foremen, who greatly prefer having one of our apprentice graduates than to have a mechanic who has served an apprenticeship on other roads and who has not enjoyed the benefits of our present apprentice system.

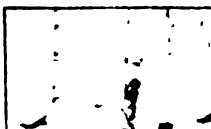
While all these percentages are not accumulative, you can safely bank on about 25 per cent increase in efficiency in the boys, due to our method of training and educating them.

Another great advantage I should mention is that when our apprentices are graduates they are capable of operating any machine or doing any class of work in the department in which they have served their apprenticeship. While this can not always be measured in dollars and cents, it is of immense benefit and value to the officers in charge of the shop, as they always have young mechanics in the shop who can perform any class of work which may arise, and one man's leaving the service will not tie up a single machine nor cripple the service.¹

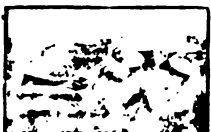
In considering the value of these several studies it could be said that Mr. Dodge was an exceptional employer, and that the work of

¹ Quoted by W. S. O'Leary in his *Wage Value of Vocational Training*, pp. 1431-32.

SHALL WE EQUIP OUR INDUSTRIAL ARMY?



**"THE SCHOOL, THE UNIVERSITY, THE LAB-
ORATORY AND THE WORKSHOP ARE THE
BATTLEFIELD OF THIS NEW WARFARE."**



**"THE WEAPONS WHICH SCIENCE PLACES IN THE
HANDS OF THOSE WHO ENGAGE IN GREAT RIVALRIES OF
COMMERCE LEAVE THOSE WHO ARE WITHOUT THEM,
HOWEVER BRAVE, AS BADLY OFF AS WERE THE DER-
VISHES OF OMDURMAN AGAINST THE MAXIMS OF
LORD KITCHENER."**

SHALL OUR CHILDREN BE IN- DUSTRIAL DERVISHES ?

THE MONEY VALUE OF EDUCATION
BY A. H. H. H. H. H.

THE MONEY VALUE OF EDUCATION
BY A. H. H. H. H. H.

Fig. 13.

The first quotation is from Sir Norman Lockyear's "Brain Power in History." The second is cited by Sir Norman from a speech by Mr. Haldane.

the General Electric Co. represents an unusual type of work that especially demands education; that the Massachusetts commission did not study enough cases; that the studies of the Brooklyn teachers did not include always a large enough per cent of the pupils of the school, and so on for the rest of the numerous studies. Any one of these studies may not be conclusive, but when all of them point so clearly and without exception to the greatly superior earning power of the educated, the conclusion is irresistible.

SALARIES OF COLLEGE GRADUATES.

Earnings of Princeton graduates.—In the "Decennial Record of the Class of 1901, Princeton University," a report is given of the salaries received by the members of this class during the first 10 years after graduation. The number from whom reports were secured each year varied slightly, but on the first year 111 reported an average salary of \$706, which by the fifth year increased to \$2,039.42, and by the tenth year, with 149 reporting, reached \$3,804. This high average is in spite of 19 teachers and clergymen in the class, whose average salary in the tenth year was between \$1,700 and \$1,800—about half what the classmates in other professions and in business were receiving. The Princeton class of 1906 likewise started out with an average salary reported of \$859.60, which at the end of five years had risen to \$2,225.80, showing practically the same rate of increase as was seen in the class of 1901.¹

Earnings of Yale graduates.—A study has also been made of the salaries received for the first five years by those who went out in 1906, both graduates and nongraduates, from the Sheffield Scientific School of Yale.² Reports were secured from 188, or about two-thirds of the class, showing that the average salaries received were as follows:

First year.....	\$683. 85
Second year.....	898. 30
Third year.....	1, 257. 24
Fourth year.....	1, 686. 14
Fifth year.....	2, 040. 04

Earnings of a Harvard law-school class.—A similar study of the Harvard law class graduating in 1905 showed that two years after graduating, with 163 reporting, they were receiving an average salary of \$1,188, and that five years after graduation, with 151 reporting, the average had climbed to \$2,616.³

¹ The Decennial Record of the Class of 1901, Princeton University, pp. 344-345, and the Fifth Record of the Class of 1906, Princeton University, pp. 245-259.

² Yale Alumni Weekly, 22: 6, Sept. 20, 1912.

³ Yale Alumni Weekly, 21: 244-45, June 19, 1912.

SALARIES PAID UNIVERSITY GRADUATES



THE INCOMES RECEIVED FROM THEIR OWN
WORK FOR THE FIRST TEN YEARS AFTER
LEAVING COLLEGE WERE REPORTED BY
GRADUATES AS FOLLOWS:

GRADUATES OF	1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	5TH YEAR
PRINCETON 1901	\$706	\$902	\$1199	\$1651	\$2039
" 1906	860	1165	1332	1427	2226
YALE 1906	740	969	1287	1523	1887

RECORD FOR 2ND FIVE YEARS'

GRADUATES OF	6TH YEAR	7TH YEAR	8TH YEAR	9TH YEAR	10TH YEAR
PRINCETON 1901	\$2408	\$2382	\$2709	\$3222	\$3804



EDUCATED MEN RECEIVE GOOD SALARIES:

EDUCATION PAYS THE INDIVIDUAL.

EDUCATED MEN RENDER EFFICIENT SERVICE:

EDUCATION PAYS THE STATE.

CHART
"THE MONEY VALUE OF EDUCATION"
BY A. C. BROWN, 1908

CHART OF
"THE UNIVERSITY OF TEXAS"
PRESENTED BY OFFICERS

Fig. 14.

The figures are from "The Fifth-Year Record of the Class of 1906, Princeton University," pages 245-259. Reports were from about two-thirds of the members of the classes. In the same way 10 years after graduation the class of 1890 of Dartmouth reports an average income of \$2,097; the class of 1903 of Northwestern University an average of \$1,863 for the fifth to tenth year after graduation; and the Harvard law class of 1905 reports an average of \$2,616 the fifth year after graduating in law.

Earnings of Northwestern graduates.—Northwestern University made an investigation of the salaries received by its graduates of 1903¹ and found that during the first five years these averaged \$867 and for the next five years \$1,862 per year. While this seems lower than the salaries reported from the eastern universities, it must be remembered that the average salary for the last five years and not the average salary of the tenth year is given. It should also be remembered that 10 years after his graduation the average college man is only a little over 30 years old, and has a prospect of continued increase in salary for another 10 or 20 years.

Earnings of Dartmouth graduates.—In 1909 reports were secured from 67 out of 100 of the class of 1899 of Dartmouth College, which showed that the average salary received by these men 10 years after graduation was \$2,097.25.²

Salaries of University of Texas graduates.—In reply to a questionnaire sent out by Mr. E. V. White concerning the earnings of the 192 graduates of his class (1903) of the University of Texas, 76 reported. In these reports personal earnings (wages, salaries, and professional fees) were reported separate from income from inherited property or speculation. Fifty-four of the students reporting had earned part or all of the money expended on their education, and hence represented not even well-to-do families. Average annual salaries reported by these graduates were as follows:

Salaries of graduates of the University of Texas.

	First year.	Third year.	Fifth year.	Eighth year.	Tenth year.
Academics.....	\$686	\$1,223	\$2,111	\$2,462	\$2,522
Men.....	559	607	842	1,031	1,015
Women.....	639	1,022	1,605	1,985	2,108
Average.....	668	1,278	1,915	3,097	3,812
Lawyers.....	857	1,160	1,430	1,803	2,008
Engineers.....	1,092	1,942	2,750	3,500	4,467
Doctors.....	636	1,076	1,250	1,375	1,850
Pharmacists.....					
Average.....	708	1,219	1,822	2,498	2,943

In reply to the objection that these do not represent fair averages of the graduates' wages, because only those who have good salaries would answer such a questionnaire, Mr. White writes that he is personally acquainted with many of those not reporting and knows that many of them have even better salaries than the averages given above.³

Increased earning power of evening students in Pennsylvania School of Finance and Accounts.—The rate of increase in salaries from year to year of the students who have attended the night School of Finance and Accounts of the University of Pennsylvania while

¹ The Dial, 55, No. 649, p. 10, July 1, 1913.

² H. A. Miller, Science, N. S. 34, 789-90; Feb. 4, 1910.

³ The above is taken from a manuscript report prepared by E. V. White, now dean of the Texas College of Industrial Arts.

continuing their regular business occupations during the day presents another remarkable instance of the immediate financial returns from education. Three hundred and fifty men graduated from this evening school in seven years, beginning in 1907. The average salaries of these students on entering the school, the salaries in 1913, the percentage of annual increase, and the total increase were as follows:

Salaries of students before entering and after leaving the University of Pennsylvania Evening School of Finance and Accounts.

Year of enrollment.	Year of graduation.	Average salary on enrollment.	Average salary, 1913.	Per cent increase.	Per cent increase per annum.
1904....	1907	\$1,040	\$3,120	198	22
1905....	1908	956	3,347	250	31
1906....	1909	1,003	2,700	179	26
1907....	1910	1,041	1,869	79	13
1908....	1911	940	1,690	79	16
1909....	1912	807	1,411	75	19
1910....	1913	753	1,480	96	32

Average annual increase, 23 per cent.

It will be seen that those students who entered in 1904, having an average salary of \$1,040, have increased it on the average 22 per cent each year, and nine years later have an average salary of \$3,120. Those who entered in 1905 with an average salary of \$956 progressed even more rapidly, making gain in salary of 31 per cent a year and reaching in eight years an average of \$3,347 per year. The record for all classes taken together shows an average increase in salary of the entire body of graduates of 23 per cent a year. Business men are not in the habit of increasing the salaries of their employees 23 per cent a year, or giving to them average salaries of over \$3,000. If these students are promoted at that rate and receiving such salaries, then their training in school must have given them an increased efficiency somewhat in proportion to their increased salaries.

Superior earning power of graduates of schools is a demonstrated fact.—Such studies as the above, while open to the criticisms that have been mentioned before, because of the fact that the educated are a selected set to begin with, have nevertheless answered unmistakably the question as to whether the schools, with all their admitted imperfections, are preparing their pupils for greater economic efficiency. The figures show conclusively that the schools are giving their pupils a greater earning power than even the strongest advocates of education had claimed. Inevitably, as the economic processes become more complex, the relative need for directive force in industry becomes greater and greater. Experience has shown that only through a thorough system of public schools and colleges can a State or nation provide for itself an adequate supply of citizens capable of furnishing this necessary directive force.

THE STATE THAT FAILS TO EDUCATE



**"THE EDUCATED MIND IS THE GREAT-
EST PRODUCING AGENCY IN THE WORLD.
WITHOUT WHICH FERTILE SOIL, TIMBERED LAND,
AND MINERAL DEPOSITS ARE BUT SO MUCH
USELESS MATERIAL."**



**"THE STATE THAT FAILS TO EDUCATE DOOMS
ITS CHILDREN TO INDUSTRIAL SUBJUGATION
BY THOSE FROM STATES THAT EDUCATE. MORE
THAN ONCE HAVE NATIVES LOST THEIR LAND
FROM LACK OF EDUCATION."**

**SHALL WE PREPARE OUR CHILDREN TO
HOLD THIS LAND?**

THE MONEY VALUE OF EDUCATION
BY A. C. CARRILL, F. R. S.

THE MONEY VALUE OF EDUCATION
BY A. C. CARRILL, F. R. S.

FIG. 15.

LIST OF REFERENCES ON THE MONEY VALUE OF EDUCATION.

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HUMPHREYS, ALEXANDER CRUMBIE. The economic values of industrial education. In National society for the promotion of industrial education. Proceedings, 1909. p. 26-38. (Its Bulletin no. 10.)

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[MICHIGAN. UNIVERSITY. ENGINEERING SCHOOL. Statistics concerning the success of its graduates.] American educational review, 31:492, May, 1910.

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Gives the value of a college education.
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Tables showing earnings of graduates of Bowdoin college, by decades, 1 to 60 years out of college.
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College graduates among Congressmen.
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Shows per cent of college men in prominent public positions.
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- The value of an education to the individual. Does it "pay" to go to college? *Christian student*, 17: 66-68, May, 1916.
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- DABNEY, CHARLES W.** Ratio of education to production. World's work, 1: 587-88, April, 1901.
- A world wide law. In University of Tennessee. Index, series II, no. 10.
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- ELLIS, A. CASWELL.** The relation of education to economic development. Texas school magazine, 12: 5-8, November, 1909.
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- FERNALD, R. F., and SMITH, C. D.** Résumé of producer-gas investigations. October 1, 1904-June 30, 1910. U. S. Bureau of Mines. Bulletin, 13.
Gives an account of the savings made possible by producer-gas engines.
- FISHER, IRVING.** Conservation of human life. United States 62nd. congress, 2nd. session. Document, 493.
Shows the financial losses from disease and the enormous savings brought about by medical science.
- Economic aspects of lengthening human life.
Similar to the article above.
- Report on national vitality. Committee of one hundred on national health. Bulletin, no. 30.
Similar to the first-mentioned article.
- FRANKEL, LEE K.** Conservation of life by life companies. Reprinted from the Insurance world, August 12, 1913.
Shows great money value of medical science.
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- HOWARD, L. O.** Recent progress and present conditions of economic entomology. In Seventh international zoological congress. Proceedings.
Shows money saved by economic entomology.
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Gives concrete cases of great money losses prevented by applying knowledge of entomology.
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- NATIONAL SOCIETY FOR THE PROMOTION OF INDUSTRIAL EDUCATION. Bulletin no. 1. This gives the address of Sir Norman Lockyear on "Brain power in history."
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- WISCONSIN UNIVERSITY. [Account of the discoveries made and practices taught by the University of Wisconsin that have brought great financial returns to the state.] Bulletin, no. 666. General series, 478.
- Work and needs of the agricultural college and experiment station of the University of Illinois. Illinois printing company, December, 1908.

DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

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THREE SHORT COURSES IN HOME MAKING

By CARRIE ALBERTA LYFORD
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THREE SHORT COURSES IN HOME MAKING.

INTRODUCTION.

The three brief courses in home making outlined in this pamphlet have been especially prepared for use in the elementary rural schools. They are in no sense a complete outline of the subjects with which they deal; rather, they indicate a few of the important phases of food study, sewing, and care of the home with which the girl in the elementary school should become familiar. The underlying thought for each problem should be, "Will this help the girls to live more useful lives and will it lead to better conditions in their homes?"

The lessons are purposely made simple, and the plans are definitely outlined, so that the inexperienced teacher will be able to get her problem well in hand. The experienced teacher may find in them suggestions that will be of value in the further development of her course.

The lessons were originally planned for use in the rural schools of the South.¹ During the six months that they have been in use, however, the demand for copies of the outlines has been almost equally great from all parts of the country; hence, in so far as possible, general problems have been stated. In any case the teacher who desires to use the course will necessarily have to adapt it to her own community, and it is hoped that she may be able to do this with but little alteration. While conditions of living and choice of foods differ in the various parts of the country, general principles of nutrition, rules of sanitation, and methods of cooking and serving are the same for all.

Because of the short school year in some rural schools and the difficulty of securing time on the program for frequent lessons in home making, each of the courses has been limited to 20 lessons. Some teachers may not be able to have a greater number of lessons during the school year, and they will find it well to carry the three courses through three successive years. In other schools where more frequent lessons can be given it may be well to offer all three of the courses during one year. The courses in cooking and the care of the home can be combined to advantage, as many of their problems are

¹ The original outlines were prepared in response to requests received from southern State supervisors.

related. The lessons in sewing can be given on another day of the week or it may be well to have them given early in the year and followed later in the year by the cooking lessons. Thus opportunity will be furnished for the making of the cooking apron and the hemming of the towels.

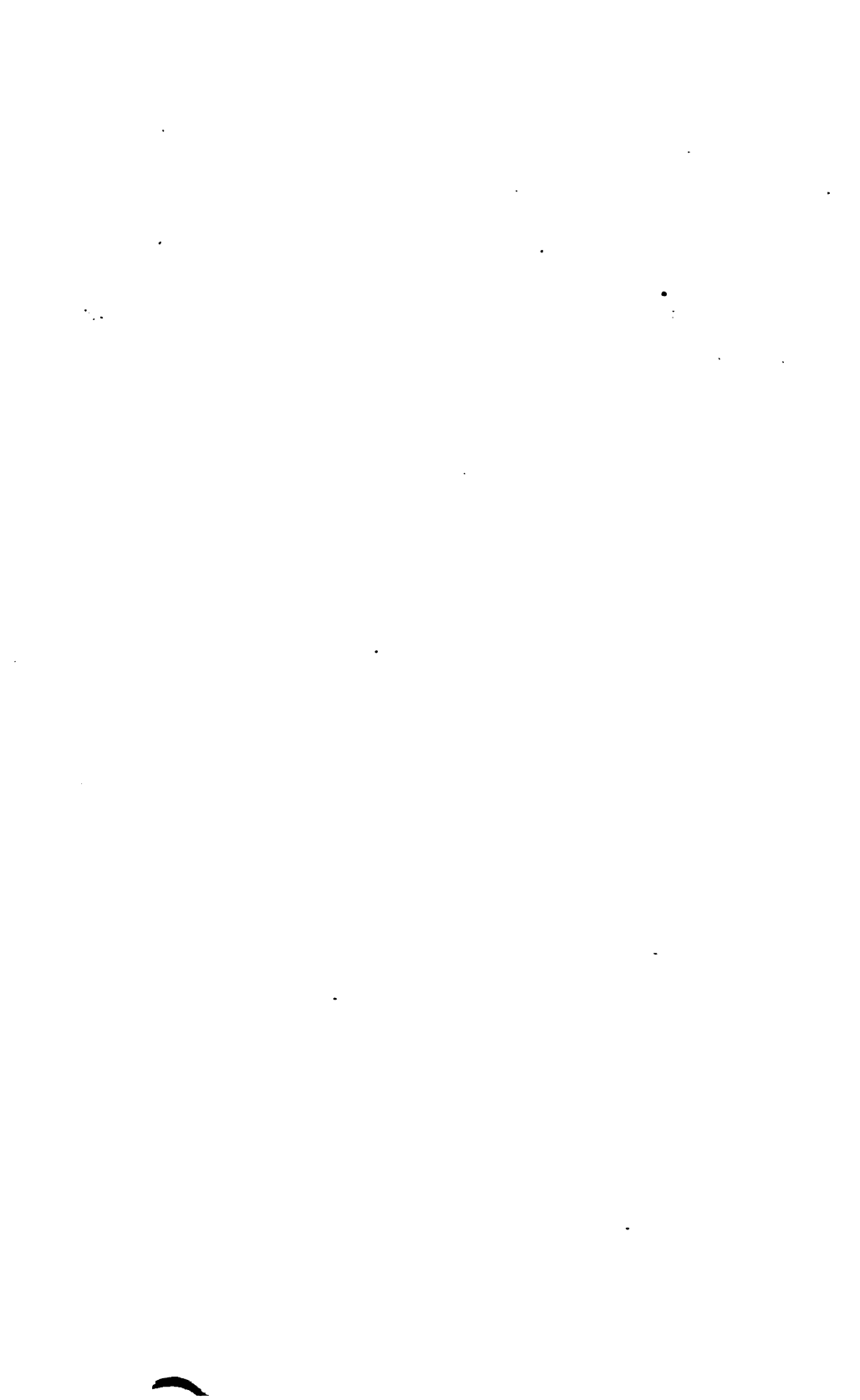
It is most desirable that periods of at least 40 minutes be provided for all of the practical lessons. Longer periods will be necessary for some of the lessons, such as the preparation and serving of a meal. If no practical work is undertaken in the lesson, a 30-minute period is sufficient.

A HOME-ECONOMICS LIBRARY FOR THE RURAL SCHOOL.

In addition to the textbooks listed as sources of special reference for the rural teacher, the following books bearing on home economics or on methods of teaching are suggested for the rural-school library. They have been chosen with the threefold purpose of providing references for the teachers, reading matter for the pupils, and a loan library for the parents.

- Balderston, L. Ray—"Laundering." Price, \$1.25. Published by the author. Philadelphia.
- Carney, Mabel—"Country life and the country school." Price, \$1.25. Row, Peterson & Co., Chicago.
- Carpenter, F. O.—"Food, or how the world is fed." Price, 60 cents. American Book Co., New York City.
- , ——, —"How the world is clothed." Price, 60 cents. American Book Co., New York City.
- , ——, —"How the world is housed." Price, 60 cents. American Book Co., New York City.
- Chamberlain, J. F.—"How we are clothed." Price, 40 cents. The Macmillan Co., New York City.
- , ——, —"How we are fed." Price, 40 cents. The Macmillan Co. New York City.
- , ——, —"How we are sheltered." Price, 40 cents. The Macmillan Co., New York City.
- Conn, H. W.—"Bacteria, yeasts, and molds in the home." Price, \$1.20. Ginn & Co., Boston.
- Cooley, Anna M.—"Domestic Art in Women's Education." Price, \$1.25. Scribners New York City.
- Dewey, John.—"The School and Society." Price, \$1. The University of Chicago Press, Chicago.
- Farmer, Fannie M.—"The Boston cooking school cook book." Price, \$1.80. Little, Brown & Co., Boston.
- Farnsworth, N. W.—"The Rural School Lunch." Price, 25 cents. Webb Publishing Co., St. Paul.
- Field, Jessie, and Nearing, Scott.—"Community Civics." Price, 60 cents. The Macmillan Co., New York City.
- Hutchison, Robert.—"Food and Dietetics." Price, \$3. William Wood & Co., New York City.
- Hough, T. H., and Sedgwick, W. T.—"Human Mechanism." Price, \$2.40. Ginn & Co., Boston.

- Kinne, Helen, and Cooley, Anna M.—“Clothing and Shelter.” Price, \$1.10. The Macmillan Co., New York City.
- , ———, ————“Foods and Household Management.” Price, \$1.10. The Macmillan Co., New York City.
- Lynch, C.—“American National Red Cross Textbook.” Price, 30 cents. Blakiston, Philadelphia.
- Maxwell, A. C., and Pope, A. E.—“Practical Nursing.” Price, \$1.75. Putnam, New York City.
- Ogden, Henry Neely.—“Rural Hygiene.” Price, \$1.50. Saunders, Philadelphia.
- O’Shea, M. V., and Kellogg, J. H.—“Health and Cleanliness.” Price, 55 cents. The Macmillan Co., New York City.
- Pickard, A. E.—“Rural Education.” Price, \$1. Webb Publishing Co., St. Paul.
- Pyle, Walter L.—“Manual of Personal Hygiene.” Price, \$1.50. Saunders, Philadelphia.
- Richardson, Bertha J.—“The Woman Who Spends.” Price, \$1. Whitcomb & Barrows, Boston.
- Rose, Mary S.—“Food for the Family.” Price, \$2.10. The Macmillan Co., New York City.
- Sherman, Henry Clapp.—“Food Products.” Price, \$2.25. The Macmillan Co., New York City.



TWENTY LESSONS IN CARE OF THE HOME.

For the Rural Schools.

OUTLINE OF THE COURSE

- Lesson I. Arrangement and care of the kitchen.
- Lesson II. Care of cupboards and utensils.
- Lesson III. Care of food: Methods of keeping, storing, and handling.
- Lesson IV. Disposal of waste. Care of garbage. Disposal of dish water. Protection of water supply
Care of out-door closet. Simple disinfectants.
- Lesson V. Making soap.
- Lesson VI. Setting the table.
- Lesson VII. Waiting on table.
- Lessons VIII and IX. General cleaning of a room.
- Lesson X. Care of bedroom. Ventilating and cleaning bedroom; making beds.
- Lesson XI. Care of lamps.
- Lesson XII. Prevention of pests.
- Lesson XIII. Removing stains, bleaching fabrics, and setting colors.
- Lesson XIV. Washing dish towels, school curtains, etc.
- Lesson XV. Ironing.
- Lessons XVI and XVII. Care of the baby: Food, sleep, clothing, and bathing.
- Lesson XVIII. Cost of food, clothing, and house.
- Lesson XIX. How to keep accounts.
- Lesson XX. Care of the exterior of the house.

SUGGESTIONS TO THE TEACHER.

The purpose of the course entitled "The Care of the Home" is to give the girls instruction in the various household tasks, in order that better living conditions may be secured in the homes. The beauty and sacredness of home life should receive emphasis, so that the girls may feel the importance of conscientious work in the performance of their daily household duties. The girls should have some insight into the sanitary, economic, and social problems that are involved in housekeeping, so that they may develop an increased appreciation of the importance of the home maker's work.

The two most important things to be taught are "cleanliness and order." Too much emphasis can not be put on the value of fresh air and sunshine and the necessity for free use of hot water and soap. The value of property must be emphasized. Economy in the purchase and handling of house furnishings and equipment must be considered. Instruction should be given in the care and arrangement of furniture and in the care of foods and clothing. Simple instruction in the care of babies should be given, since the children are generally responsible for the care of the younger members of their families.

In some of the lessons more subjects may be suggested than the teacher will have time to take up in a single period. In that case it will be well for her to choose the subject which seems most vital to the immediate needs of the community. In many cases she may be able to give an increased number of lessons. Practice and drill in all of the processes involved in housewifery are essential to successful training.

If a cupboard and table have been arranged for the use of cookery classes, most of the suggested work can be carried out with the school equipment. Where equipment is not at hand in the school, and school conditions do not approximate home conditions, it may be possible to secure permission to give the lesson in a near-by home of one of the girls after school hours.

In each lesson the teacher should strive to impress the girls with the importance of doing some one simple thing well, giving them helpful information in regard to the subject that will be of value to them in their own homes.

The rural teacher who is eager to make her schoolroom an attractive place can devote some time in these lessons to such problems as the hanging and care of simple curtains; the care of indoor plants; the arrangement of pictures; the planning of storage arrangements for supplies and of cupboards for dishes; and the preparations for the serving of the school lunch.

It will be desirable for the rural teacher to have the following simple equipment on hand in order to teach these lessons effectively. Additional special equipment can be borrowed from the homes.

EQUIPMENT.

Broom, 1.	Dust pan, 1.
Cloths for cleaning, 6.	Garbage can (covered), 1.
Dish cloths, 2.	Lamp, 1.
Dish towels, 12.	Oil can, 1.
Dust brush, 1.	

Southern teachers can obtain the following helpful bulletins from Hampton Institute, Hampton, Va., upon request:

Hampton Leaflet; Vol. II, No. 9, Housekeeping Rules.

Hampton Leaflet; Vol. VI, No. 2, Housekeeping and Sanitation for Rural Schools.

Hampton Leaflet; Vol. VI, No. 9, Housekeeping and Cooking Rules for Rural Communities.

CARE AND SANITATION OF THE HOUSE.

A suggestive list of texts and reference books for use in elementary rural schools.

Brewer, I. W.—“Rural Hygiene.” Price, \$1.25. Lippincott Co., Philadelphia.

Dodd, Helen.—“The Healthful Farmhouse.” Price, 60 cents. Whitcomb & Barrows, Boston.

Hutchinson, Woods.—“Community Hygiene.” Price, 60 cents. Houghton Mifflin Co., Boston.

Forster, Edith H., and Weigley, Mildred.—“Foods and Sanitation.” Price, \$1. Row, Peterson & Co., Chicago.

Kinne, Helen, and Cooley, Anna M.—“The Home and the Family.” Price, 80 cents. The Macmillan Co., New York City.

Kittredge, Mabel H.—“Housekeeping Notes.” Price, 80 cents. Whitcomb & Barrows, Boston.

Kittredge, Mabel H.—“Practical Home Making.” Price, 80 cents. The Century Co., New York City.

Kittredge, Mabel H.—“A Second Course in Home Making.” Price, 80 cents. The Century Co., New York City.

Parloa, Maria.—“Home Economics.” Price, \$1.50. The Century Co., New York City.

DETAILED LESSON PLANS FOR THE COURSE IN "THE CARE OF THE HOME."

LESSON I. ARRANGEMENT AND CARE OF THE KITCHEN.

SUBJECT MATTER.

In arranging the kitchen the three things of most importance are the stove, the sink, and the kitchen table. If there is no sink in the kitchen, there will be some other place arranged for washing the dishes, probably the kitchen table, and this must be taken into consideration when the furniture is placed. As most of the work of the kitchen is done at the stove and the table, these must both be placed where they will have a good light and be near enough to one another so that but few steps are necessary for the worker. All the furniture should be kept so clean and free from dust that the kitchen will have a neat and attractive appearance. A bit of green, a potted plant, a neat rug, and a wash table cover, to be put on the table after the dishes have been washed, will help to make the kitchen a pleasant place for the family.

The kitchen should be thoroughly cleaned after each meal. If it has become dusty or disarranged before the next meal is prepared, it should be put in order before beginning to work with the food. While the cooking is under way everything should be kept in orderly condition. Just as soon as the meal is completed the left-over food should be covered and put away to keep; scraps and trash should be gathered up and disposed of; dishes, pots, and pans should be scraped and washed in hot soapy water, then rinsed in clear, hot water, dried, and put away. The table should be scrubbed, the stove cleaned, the floor swept and scrubbed whenever necessary, and everything put neatly in its place.

Care of coal or wood range.—All spots should be kept off the range by wiping with old paper. The range should be washed off with soap and water if it is in bad condition. If it is oiled occasionally, blacking will not be necessary. If blacking is used, it should be applied with a cloth and rubbed to a polish with a brush just as the fire is being started. Once a week the ashes and soot flues back of the oven and under it should be cleaned out.

Directions for building a fire.—To build and care for a fire in the coal and wood range, close all dampers, clean the grate, and remove ashes from the pan. Put on the covers and brush the dust off the stove. Open the creative damper and the oven damper; leave the check closed. Lay some paper, slightly crumpled into rolls, across the base of the grate. Lay small pieces of kindling wood across one

another, with the large pieces on top. Lay pieces of hardwood or a shovelful of coal on top, building to admit of free circulation of air. If the stove is to be polished, rub it with blacking. Light the paper from below. When the fire begins to burn briskly, add coal or wood; then add more when that kindles. When the fire burns briskly, and blue flame is no longer seen (about 10 minutes), close the oven damper. Close the draft as soon as the fire is sufficiently hot. Brush the stove and floor beneath as soon as the fire is started. Polish the stove. If the fire becomes too hot, open the check. Fill the tea-kettle with fresh water and set it on the front of the range.

PRELIMINARY PLAN.

It will be well to have this lesson succeed or follow a cooking lesson, for then the girls will have a keener interest in the problems of the kitchen.

(See Twenty Lessons in Cooking, Lesson I.)

METHOD OF WORK.

Cleanliness and order are the two points to be considered in this lesson. The doing well of each simple household task and the thoughtful arrangement and planning of all parts of the house should be emphasized as of great importance to the housekeeper's success.

Begin the lesson with a discussion of the purpose of the kitchen; then discuss its arrangement from the standpoint of convenience for the work that must be done there. Emphasize the importance of having the furniture so arranged that work can be done quickly and easily, and that the kitchen be given a comfortable and attractive appearance. Have the girls arrange the furniture in the school-room. Discuss and demonstrate the care of the stove by use of the school stove. Assign each girl a time when she is to look after the stove on succeeding days and grade her on her work. Have each girl bring a report from home as to what she is doing to help in the care of the home kitchen. Make a specific assignment for home work.

QUESTIONS USED TO DEVELOP THE LESSON.

What is the purpose of the kitchen?

What are the principal articles of furniture in the kitchen?

What must be kept in a kitchen besides furniture?

How should we arrange these things?

Can we make any general rules as to arrangements?

Why is it difficult to keep the kitchen clean?

At what times is the kitchen most apt to become disarranged?

Why is it important to keep the kitchen in good order?

In what order should the kitchen be at the time we begin the preparation of the meal?

How should the floor be cleaned? The utensils? The air?

How should we take care of the kitchen during the meal?

What should we do with any left-over food?

How should we take care of the stove after the meal?

LESSON II. CARE OF CUPBOARDS AND UTENSILS.**SUBJECT MATTER.**

It is of the utmost importance that cupboards and other places where food is stored be kept free from dirt and scraps of food. Ants, cockroaches, mice, and other pests infest dirty places where food is kept, and render a house unfit for human habitation. It requires constant care and watchfulness on the part of the housewife to keep cupboards clean. She must look over the shelves daily, wiping them off whenever they need it and giving them a thorough cleaning at least once a week.

The housekeeper should know how to care for the various utensils and understand the simplest and best methods of keeping them clean. Utensils should never be put in the cupboards until perfectly clean and dry. If utensils have become discolored or badly coated with materials, they should be specially scoured when the dishes are washed. If something has been burned in a kettle, the kettle can be cleaned by filling with cold water, adding washing soda, and boiling briskly for half an hour; after that a slight scraping ought to take the burned portion off. If not, it should be boiled again with soda water. If a kettle has been used directly over a wood fire and becomes blackened with soot, it should be rubbed off with newspaper and then with an old cloth. Kettles should be dried well before putting away. With proper care they seldom become rusty. If an iron kettle has rusted, it can be rubbed with kerosene and ashes, then washed in strong, hot, soda water, rinsed in clear hot water, and dried on the stove. If a kettle is very rusty, it should be covered thoroughly with some sort of grease, sprinkled with lime, and left overnight. In the morning it should be washed out with hot soda water and rinsed in clear, hot water. A new kettle is generally rusty, and should be greased thoroughly inside and out and let stand two days; then washed in hot soda water.

Soft chimney brick can be used for scouring iron utensils and steel knives and forks. If iron pots and frying pans are scrubbed with a piece of soft chimney brick each time they are used and then washed in hot soapsuds, they can be kept in good condition. Tinware and steel knives and forks can be cleaned by scouring with ashes. Only fine ashes should be used on tinware. The brown stains on granite saucepans should always be scoured off. Coffee and tea pots should be cleaned daily, the grounds removed, and the interior of the pots washed out thoroughly. The tea kettle should be washed and dried out over night and left open to air.

PRELIMINARY PLAN.

If school lunches are served or cooking lessons given at the school, it will be well to use the lesson to get the cupboards in readiness. If it is impossible to do this at school, arrange to have such a lesson in

one of the homes outside of school hours. Be sure that the house-keeper is in sympathy with the work and will cooperate with the plans.

METHOD OF WORK.

Assign each girl a task in the cleaning, scouring of the dishes, and arrangement of the cupboard. Set a definite amount to be done and carry out the plans, leaving a clean and neatly arranged cupboard at the end of the lesson.

LESSON III. CARE OF FOOD.

SUBJECT MATTER.

There are several points of importance that must be borne in mind if food is to be kept in good condition. Most foods change easily. Vegetables and fruits lose water, wilt, and become unfit to eat. Flour and corn meal become moldy. Potatoes decay and sprout. Some foods, such as milk, turn sour. Eggs become tainted and butter grows rancid. This spoiling can be prevented with proper care in the handling, storing, and keeping of foods.

The spoiling of food is due to the presence of microorganisms. If foods are fresh and sound and kept cool and clean in every way, spoiling will not take place readily, because the microorganisms will not develop. If the food is roughly handled and bruised, decomposition will take place readily, for microorganisms develop in the bruised portions. Care must therefore be taken to select food wisely, handle it carefully, wash it if it is not already clean, put it in clean receptacles, and keep it in a clean, cool place. All pots, pans, and dishes in which foods are kept or cooked should be thoroughly cleansed and rinsed well, so that no fragments of food stick to them to decay and to cause possible infection to the next food that is put in. Every part of the kitchen and storerooms should be kept clean, dry, and well aired. Light is the best germicide and purifier known.

Covered receptacles should be secured for all foods. Those that are mouse proof and insect proof are essential to a well-kept pantry. All bottles and cans should be neatly labeled and so arranged that each one can be conveniently reached. The outside of the bottle or case should always be wiped off after it has been opened and food has been removed from it. The shelves on which food cases are kept should be wiped off every day. If a supply of fruit or vegetables is kept on hand, the food should be looked over frequently, and any that shows even the slightest suggestion of spoiling should be removed. Bread should be kept in a covered tin box, the box washed out once or twice a week, and frequently aired.

PRELIMINARY PLAN.

If cooking lessons are to be given, it will be well to have this lesson in connection with the first lesson and to make it a means of arranging for the materials that are to be kept on hand and of determining how everything is to be handled.

METHOD OF WORK.

Devote a large portion of the lesson to a discussion of the necessity for care in the handling, storing, and keeping of food. If facilities permit, devote a few minutes to the putting away of foods that are to be used in the next cooking lesson or school lunch, discussing the reasons for such care.

LESSON IV. DISPOSAL OF WASTE.

SUBJECT MATTER.

If one looks after the daily disposal of waste, there will be no offending accumulation of trash. Scraps of food that can be no longer utilized for the table can be fed to the pigs or chickens, but they should not be allowed to stand around and gather flies. A covered pail or pan should be used for holding the garbage until final disposal is made of it. Those portions of waste that are badly spoiled and will be of no value in feeding the stock should be burned up at once. Piles of waste vegetable substances, if suitable, should be fed to the stock, and if not, should be buried in a thin layer on the ground at some distance from the house so that they may enrich the soil and not attract flies.

Utensils that have held food should be thoroughly washed and rinsed with hot water or steam in order to prevent particles of food from adhering and becoming spoiled. Milk bottles and pans should always be thoroughly sterilized with boiling water or steam after they have been washed. The garbage can should be boiled with water and soda each day and rinsed with hot water in order to keep it sweet and clean.

Old papers that are badly soiled should be burned, but all others should be kept for use in cleaning the stove, starting fires, etc. Empty cans should be well washed and buried, so that they will not prove a breeding place for flies. It is well to pierce them through the bottom immediately after opening them so that they will not hold water. If not convenient to bury the cans, they should be burned up. Dishwater should be emptied some distance from the house unless there is a drain near the house. All receptacles that hold water should be carefully emptied and all depressions in the soil should be filled up to prevent mosquitoes. All waste water can be used on the garden.

Protection of water supply.—Only water from deep wells should be used for drinking purposes, because all surface water and water in shallow wells becomes dangerous through seepage from compost, pigpens, privies, and other places where decayed organic matter is accumulated. In order that the water be kept clean, the well must be supplied with a tight-fitting top, which need not be opened, and a metal pump to bring up the water. A well platform that allows water spilled on it to run back into the well is unsafe, for any filth carried on to the platform in any way will be washed directly into the well. Rats, mice, and other animals get into the well if the top is not tight, and these, in addition to being unpleasant, are liable to carry germs.

Simple disinfectants.—Sunshine and fresh air are nature's disinfectants, and should be freely admitted to every part of the house. Windows should be left open whenever possible. The windows in sleeping rooms should always be opened at night. The interior of the house should be kept perfectly dry. Decay does not take place in dry places that are well aired. A damp cellar should be drained off, and the grounds around the house should be prevented from draining into the cellar. Coarse coal ashes should be used to fill in around the house, on the walks, etc., to help secure thorough drainage. The fine ashes should be thinly scattered over the vegetable garden in order to restore the valuable properties they contain to the soil. Wood ashes can be used as a simple disinfectant to cover decayed organic matter. Whitewash is a good disinfectant and should be frequently used both inside and outside the house and on all outbuildings. Slacked lime is valuable as a disinfectant for use in the cellar or barn lot. Kerosene and creoline also make good disinfectants for frequent spraying of the barn lot.

Care of out-of-door closets.—The privy should be so arranged that it may be cleaned often and all excreta disposed of in a safe way. The building should be so well built that there will be no cracks for the constant admission of flies. In a poorly constructed building, old paper can be pasted in the cracks to make the structure fly proof. After each using dry earth, street dust, or lime should be sprinkled through the seat, then the seat should be closed to prevent flies or mosquitoes entering. The top of the seat should be frequently washed, and both the seat and the floor in front of it scrubbed at least once a week.

PRELIMINARY PLAN.

It will be well to teach this lesson at a time when improvements are necessary in the care of the schoolhouse. The discussions in regard to out-of-door closets will have to be taken up at a time when the girls are alone with the teacher.

METHOD OF WORK.

Discuss the disposal of waste, the care of garbage, etc., for the home and for the school. Talk over the care of waste from the school lunch and discuss methods of keeping the school in sanitary condition. Follow this by general cleaning about the schoolhouse.

LESSON V. MAKING SOAP.

SUBJECT MATTER.

HOMEMADE HARD SOAP.

6 pounds fat.

1 can lye.

1 pint of cold water.

1 tablespoon borax.

Melt the fat slowly. Mix lye and water in a bowl or kettle (do not use a tin pan), stirring with a stick until the potash dissolves. Add the borax and allow the mixture to cool. Cool the fat and when it is lukewarm add the lye, pouring it in a thin stream and stirring constantly. Stir with a smooth stick until about as thick as honey and continue stirring 10 minutes. Pour the mixture into a box and allow it to harden. Cut into pieces the desired size and leave in a cool, dry place for 10 days, to ripen before using.

When making the soap be careful not to spatter potash or lye on the hands, as it makes a bad burn. If hands are burned with lye, rub with grease at once. Do not wet them.

PRELIMINARY PLAN.

Some time before this lesson is given ask the girls to bring scraps of fat from home. See that these are in good condition, and weigh them to determine the portion of the recipe that can be made. Ask if one of the girls can bring sufficient borax for the recipe.

METHOD OF WORK.

Have the girls look the fat over and put it on to melt, watching it carefully. While it is heating and cooling, discuss the process of soap making, cost of materials, care necessary in the making of soap, and importance of its use. Get the other materials ready for the recipe and a box for molding the soap, and have the girls work together. After the soap has hardened and been cut, have the girls put it away on a shelf to dry.

LESSON VI. SETTING THE TABLE.

SUBJECT MATTER.

Points to be remembered when a meal is to be served: The dining room must be clean, free from dust and flies, well aired, sufficiently lighted, and in good order.

The table must be perfectly clean and covered with a clean white cover (tablecloth, doilies, paper napkins, or oilcloth).

A vase of flowers or leaves, or a small potted plant, arranged in the center of the table, will help to make the table attractive.

The table should be prepared with everything necessary for serving the meal, but only those foods placed on it that will not be spoiled with standing. If there is danger of the food attracting flies, cover it carefully.

Plates for everyone who is to partake of the meal should be arranged at equal distances from one another, half an inch from the edge of the table.

The knife should be placed at the right of the plate with the cutting edge toward the plate and half an inch from the edge of the table.

The fork should be placed at the left of the plate with the tines of the fork turned up and half an inch from the edge of the table.

The spoon should be placed, bowl upward, at the right of the plate, to the right of the knife if it is to be used first, to the left of the knife if it is not used until after the knife is used. It should be placed half an inch from the edge of the table. Spoons and forks for serving should be placed at the right of the one who is to serve. No one at the table should have to use the personal fork or spoon for serving either herself or others.

The napkins should be simply folded and placed at the left of the fork.

The tumbler should be placed at the upper end of the knife.

Cups and saucers should be placed at the right of the plate with the handle of the cup turned to the right.

The individual butter dish, if used, should be placed at the upper left hand of the fork.

Salts and peppers should be placed in the center of the table or at the sides where they can be conveniently reached. Individual salt dishes, if used, should be placed immediately in front of the individual plate.

The chairs should be placed up to the table after it is set. Care should be taken not to place them so close that it will be necessary to move them when they are occupied.

PRELIMINARY PLAN.

If possible, arrange to give this lesson before Lesson VIII in the series of "Twenty Lessons in Cooking" is given; then the emphasis in that lesson can be put upon what to serve, proper combinations, etc., while this lesson gives the drill in the arrangement and handling of dishes.

It is desirable to give the girls thorough drill in table setting and table service, since much of the pleasure derived from eating foods depends upon careful attention to these processes.

Be careful to see that everything necessary is on hand to set the table nicely but simply. For class practice a small table can be set for four. This will necessitate a table cover, five or more dinner

plates, four butter dishes or plates, four tumblers, four cups and saucers, four knives, four forks, four teaspoons, four napkins, a salt dish, a platter, one serving spoon, and one serving fork. If these things are not already in the school, they can probably be brought from home by the girls. If linen cloths are not used and can not be afforded in the homes, the girls can be taught to use a sheet of white oilcloth on the table.

Have a diagram of the arrangement of an individual place at the table made on the blackboard by some of the girls.

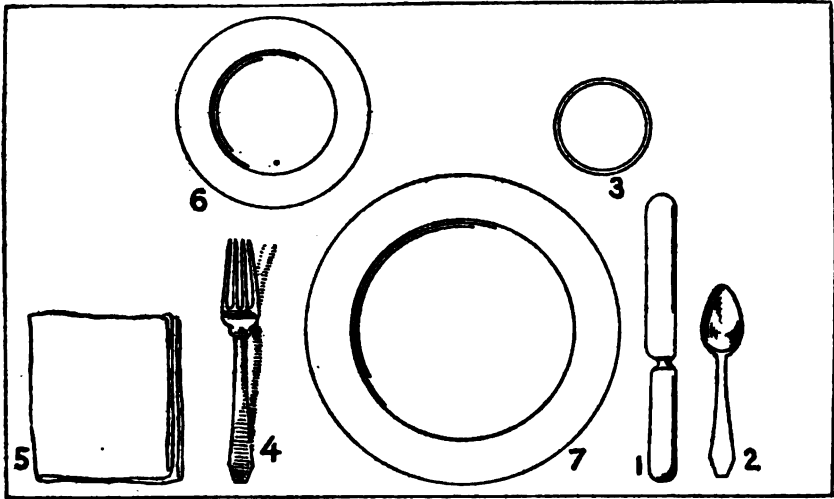


FIG. 1.—Arrangement of an individual place at table.

(Adapted from Conley, "Principles of Cooking.")

1. Knife. 2. Spoon. 3. Water glass. 4. Fork. 5. Napkin. 6. Bread-and-butter plate. 7. Dinner plate.

METHOD OF WORK.

The processes of table setting should be demonstrated with the materials at hand and the work should be adapted to home conditions.

If there is no available table in the schoolroom, the desk tops can be used for individual places.

Reasons for all the forms used should be given—the convenience of placing knives and spoons to the right, forks to the left, and the cup and saucer and tumbler to the right, the use of the napkin, etc.

LESSON VII. WAITING ON TABLE.

SUBJECT MATTER.

The person who is to wait on table must be careful to see that everything is in readiness before the meal is announced, so that she can do her work readily without subjecting those at the table to

delay. She should have drinking water, bread, and butter (if used) at hand, hot dishes ready for the hot foods, and clean dishes laid out for the dessert. She must see that her own hands are perfectly clean and her hair and dress in order. A clean, neat apron will always improve her appearance. The room should be clean and neatly arranged before the meal is served.

If the meal is to be a family one and all are to sit down at the table together, plates will be passed from one to another as they are served, but it will still be well to have one person appointed to wait on the table. She can keep watch and be ready to supply more bread, water, etc., when it is necessary and to change the plates for the dessert course. She should rise from the table quickly and quietly in order not to disturb the others and should take her place again as soon as all necessary service has been rendered.

The following rules should be observed: Always handle tumblers from the base, being careful not to bring the hands in contact with the upper edge. Fill only three-fourths full.

Serve butter in neat, compact pieces. Put on the table just before the meal is served.

Cut bread in even slices, pile neatly on serving plate, and place on table, covering with a clean napkin or towel if flies are bad or there is danger of dust. Place dessert dishes at one end of the table, or better still on a side table until time to use them. When carrying dishes to and from the table be careful not to put the fingers in contact with the food. Learn to place the hand under the dish. In nice service a napkin is used between the hand and the dish or a tray is used if the dish is a small one. The tray should be covered with a napkin or doily.

When a dish is passed, hold it at the left of the person to be served low enough so that she can help herself readily. Be sure that each dish of food is supplied with a spoon or fork for serving, and turn the handle of the serving spoon or fork toward the one being served.

If a plate is to be placed in front of a person, set it down from the right and remove it from the right. Never reach in front of others at the table.

When a course is finished remove all large dishes first; then the soiled plates, knives, and forks. Be careful to handle only a few dishes at a time and not to pile them. If another course is to be served, crumb the table, using a napkin and plate for the purpose and brushing the crumbs lightly into the plate. Fill the glasses and arrange the dishes and forks or spoons quickly for the next course.

When the meal is over the chairs should be moved back from the table, the dishes neatly piled and carried to the kitchen sink, the table wiped off, the crumbs brushed up from the floor, and the room aired.

PRELIMINARY PLAN.

Let this lesson be a continuation of the previous one, putting emphasis on the method of waiting on table. The same articles for setting the table will be required that were in use in the last lesson. In addition to these the girls must be careful to have clean aprons for the lesson on table service.

METHOD OF WORK.

Have the table set as a review of the work of the last lesson; then have four or six of the girls seated at the table and go through the forms of serving one another to any simple meal upon which the class may decide. Family meal service should be explained and demonstrated first; then service where there is one waitress. Have one girl act as waitress and serve all the others. Let them take turns in offering and placing food, removing soiled dishes, filling tumblers, etc.

LESSONS VIII AND IX. GENERAL CLEANING OF A ROOM.**SUBJECT MATTER.**

Rooms which are in constant use should be brushed up and dusted every day. A thorough cleaning of each room in the house will be necessary every week or two, even though the room is brushed up and kept in order every day. First, all closets, drawers, and other receptacles in which articles collect should be cleaned; then all large movable articles should be dusted and moved out of the room; those that are not readily movable should be dusted and covered. The floor should be swept with the windows closed; then the windows should be opened and the ceiling and walls brushed with a covered broom and the dust allowed to settle. Then the floor should be wiped with a damp cloth on the broom.¹ The woodwork should be cleaned with a damp cloth and a soap that is not too strong. Soda or sapolio should not be used. The furniture should be carefully uncovered and all arranged in perfect order.

The things that are highest up should be dusted first and care should be taken to collect all dust in the dust cloth. The cloth should be shaken out of doors after collecting the dust, washed thoroughly, and boiled after using. The dust cloth should be dampened before using on all surfaces except the polished furniture and windows.

Sweeping should be done with short strokes and the broom kept close to the floor, so that the dust will not fly about. The corners of the room should be swept first, the dust gathered in the center of the

¹ If the floor is of unfinished wood it will require a thorough scrubbing. After sweeping the floor and allowing the dust to settle, a small portion should be scrubbed at a time with a floor brush and soap. The grain of the wood should be followed when scrubbing. Scrubbing water should be changed frequently. A cloth should be wrung out of clear water for rinsing and drying the floor.

room and then swept into the dust pan. The dust should be burned up; for it may contain disease germs. The broom should be cleaned after using.

Small rugs should be cleaned out of doors. They should be swept, beaten, and reswept, then rolled until ready to put on the floor. If the rug is a large one and can not be removed, it should be wiped over with a damp cloth, rolled up, and the under side of the rug and the floor beneath it wiped up.

After the room has been cleaned, the windows should be arranged so that a supply of fresh, clean air can come constantly into the room. This is essential to every room in the house if perfect health is to be maintained.

PRELIMINARY PLAN.

It will be well to have Lesson IX given in one of the homes some day after school hours, if possible. If that can not be arranged, the schoolroom can be utilized as the place for practice.

METHOD OF WORK.

Devote Lesson VIII to a discussion of the methods of cleaning and to various short tasks about the schoolroom. In Lesson IX have the girls go through the entire process of cleaning a room. Assign some portion of the task to each one of the girls so that all of them can take part in the work. Supervise the work carefully, assign home practice in the cleaning of rooms, and have each girl clean a room at home once a week for a month

LESSON X. CARE OF THE BEDROOM.

SUBJECT MATTER.

As soon as one is dressed in the morning, the windows in the bedroom should be opened to air the room and the bedclothes should be separated and put on chairs before the window to air. The slops should be emptied and the chamber washed with cold water, using a special cloth. The bowl should be washed in warm, soapy water, which should then be poured into the chamber and used for washing it. The toilet articles should be washed, then the bowl rinsed and wiped dry. The slop jar should be washed out thoroughly, and frequently the slop jar and the chamber should be washed out with chloride of lime or some other disinfectant. The pitcher should be filled with fresh water and all articles arranged neatly on the washstand. If towels are soiled, clean ones should be supplied. The bed should be made carefully, the mattress turned, the first sheet tucked under the mattress all around, and the other covers tucked in at the bottom and two sides of the bed. The bed should be kept free from wrinkles and smooth in appearance. The pillows should

be well shaken and arranged at the head of the bed. The floor should be brushed up, the furniture dusted, and everything put in place. The windows should be left partly opened so that the bedroom is well aired. A sufficient amount of fresh air is absolutely essential in a bedroom, and it is important that the room be well aired out during the day and left with windows open at night.

When the room is to be thoroughly cleaned, the frame of the bed should be dusted and the bed made up. The window shades should be dusted and rolled up. Curtains should be well shaken and covered if one has a dust sheet. All small articles on the bureau, table, and shelf should be placed on the bed and the whole covered with a sheet. Tables, chairs, and any other movable pieces should be dusted and set outside the room or covered. Rugs should be rolled up and cleaned out of doors. The room should be swept and dusted. As soon as dust has settled, covers should be removed from the furniture, and the furniture, rugs, and all small articles should be restored to their places. Shades should be adjusted and the room left in perfect order. The broom and everything else that has been used in the work should be cleaned and put back into place.

PRELIMINARY PLAN.

It may be possible for the teacher to give this lesson in her own bedroom or in the bedroom of some of the neighbors. Unless this is feasible the only way to have it effective is to have the girls report each day on the work they do at home.

METHOD OF WORK.

Illustrate each process and give reasons for everything that is done. Emphasize the importance of the sanitary care of the bedroom, a regular time for doing the work, and the benefit of having each member of the family care for her own personal belongings and her own portion of the bedroom.

LESSON XI. CARE OF LAMPS.¹

SUBJECT MATTER.

Directions for cleaning and filling the lamp.—A bright light comes from clean burners that allow a good draft. This means constant care on the part of the one that looks after the lamps. In the daily cleaning of lamps, first dust the chimney shade and the body of the lamp. Wash the chimney. If sooty, clean with newspaper before washing. Next, turn the wick high enough to show all the charred part; cut this off, making it perfectly even, then rub with a piece of

¹ It is assumed that the teacher is acquainted with the possibilities of electricity and other methods of better lighting in country homes, and will instruct her pupils in the economic use of modern lighting facilities.

soft paper. Wipe off the burner and any other part of the lamp that seems oily. Dry with another cloth. Fill the body of the lamp with oil within an inch of the top, leaving plenty of room for the gas that may be generated from the kerosene. The gas that is generated in a lamp that has been used many times without refilling may be a source of danger.

When lighting the lamp first turn the wick down, allowing the chimney to become heated gradually. If necessary to move the lighted lamp, first turn the wick low. The flaring up of the flame smokes the chimney. Do not leave a lighted lamp in a room where there is no one to watch it. When putting out the light, blow across the chimney, never down into it, as this might send the flame down into the kerosene.

About once a month give the lamp a thorough cleaning. Spread out a newspaper and take the lamp apart. Wash the chimney and shade in hot water and dry with a towel. Polish, using soft paper. Boil every part of the burner in water to which two tablespoons of soda have been added. Put new wicks in if all old ones are dirty. Put the parts all securely together again. Keep an old pan and cloths exclusively for this purpose, and be very careful not to get a drop of kerosene or the dirty hands near any foods.

Have a regular time of the day for cleaning lamps, preferably immediately after all the morning work has been done after breakfast. Do not fill the lamps near the kitchen stove. Do not light a match while the oil can is out. Never fill a lamp while lighted or while near another one which is lighted. If a fire is caused by kerosene, smother it with a heavy rug or woolen garment. Do not attempt to put it out with water.

PRELIMINARY PLAN.

It will be well to give this lesson just before some evening entertainment at the schoolhouse. If there are no lamps at the school have a few brought in from neighboring homes. Secure an old pan and cloths to use in cleaning.

METHOD OF WORK.

Talk with the girls about the cost and properties of kerosene and the danger of having a light near a can of kerosene. Explain the draft by means of which the kerosene can be made to burn on the wick, and the danger if the burner becomes clogged up and the draft cut off. Have the lamps taken apart, burners boiled, chimneys cleaned, and body of the lamps filled and wiped off. Then have the lamps lighted to see that they burn properly.

LESSON XII. PREVENTION OF PESTS.

SUBJECT MATTER.

Household pests are annoying, dangerous to health, and destructive to property. Pests carry disease germs from one person to another and from other animals to human beings. Absolute cleanliness in every part of the house is essential if the place is to be kept free from pests. As a rule, pests flourish in dark, damp, dirty places. The housekeeper can keep her place free from pests with the proper care. If pests get started, the housekeeper should know how to exterminate them.

A few simple methods of extermination are here given:

Bedbugs.—Kerosene should be poured into all cracks and a brush, dipped in kerosene, run briskly over all surfaces. Care must be taken to have no fire in the house while this is being done. Windows should be open and the room kept free from dust. In four days this should be repeated, to kill any bugs that may have just hatched.

Cockroaches and waterbugs.—A solution of 1 pound of alum to 3 pints of water should be poured into all cracks. Insect powder and borax are also effective. Absolute cleanliness and freedom from dampness are necessary if the house is to be kept free from roaches.

Ants.—Oil of cloves or pennyroyal on pieces of cotton batting scattered about in the places where ants appear will drive them away. Saturating the nests with coal oil will destroy them. Food which attracts ants should be removed from places which they are apt to reach.

Rats and mice are best exterminated by the use of a trap or some preparation like "Rough on Rats." Traps should be set nightly and should be scalded and aired after a mouse has been caught. Rat holes may be stopped up by sprinkling with chloride of lime and then filling with mortar or plaster of Paris.

Mosquitoes breed in swampy places or in old barrels or kegs or tin cans which hold stagnant water. Therefore, if the swampy places be drained and the grounds about the house kept free from stagnant water the housekeeper will generally not be troubled with mosquitoes. Empty barrels or kegs should be inverted and old tin cans should have a hole punched in the bottom so that they will not catch water. All high weeds near the house should be cut down and destroyed so that they will not provide a damp place to harbor mosquitoes. If it is impossible to get rid of all standing water, the breeding of mosquitoes can be checked by pouring kerosene oil on the water. One ounce of oil on 15 square feet of water is sufficient. This will have to be renewed at least once in 10 days. The doors, windows, and ventilators of the house should be well screened as a protection against mosquitoes.

Flies are one of the greatest carriers of typhoid and other germs and filth of all sorts. They can be gotten rid of only when the breeding places are destroyed and the flies killed as rapidly as possible. Materials that attract flies should not be exposed in and about the house. The house should be well screened with wire mesh or mosquito netting to keep out the flies. A fly swatter should be kept at hand. Stables should be cleaned daily and the barn lot frequently sprayed with kerosene, creoline, or lime.

Fleas will be troublesome if cats or dogs are kept in the house. These house pets should be given frequent baths, the rugs on which they lie should be brushed and shaken daily, and the floors washed with soap and water and wiped with kerosene.

Moths are apt to develop in woolen garments unless the garments are thoroughly shaken and absolutely protected by wrapping in newspaper and put away. Woolen garments that are used only occasionally should be kept in a light, dry place, handled frequently, and hung in the sun occasionally. Moths or carpet beetles can be exterminated from carpets by applying kerosene.

PRELIMINARY PLAN.

Give this lesson at a time when the girls are asking about the household pests or when the school is suffering from some pests. It would be well to have the lesson in the spring just before school closes, so that the girls can put into practice what they learn. It may be desirable to devote the efforts to the destruction of one particular pest. For example, a fly crusade may be inaugurated.

METHOD OF WORK.

If there are pests in the schoolroom, discuss their habits, what seems to attract them, where they come from, etc. Have girls report any pests they have at home. Explain why they are dangerous, tell how they can be exterminated, and assign to each girl the extermination of one household pest. Have her report each day the success of her efforts. Continue this work for several weeks.

LESSON XIII. REMOVING STAINS, BLEACHING FABRICS, AND SETTING COLORS.

SUBJECT MATTER.

As garments and household linens are apt to become stained and thus lose their attractiveness, it is well to know remedies for the most common stains and the principle upon which their removal depends. All stains should be removed as soon after they occur as possible. Boiling water will loosen and remove coffee, tea, and fresh fruit stains. The stain should be held over a bowl and the

water poured upon it with some force. Cold water will remove stains from blood or meat juice. Soaking will help in the removal of blood stains. Rust stains can be removed by wetting the stain with lemon juice, covering with salt, and placing in the sun. Stains from stove blacking, paint, and grass can be removed by soaking in kerosene and washing well with soap and water. Ink stains can be removed by soaking in water, removing as much as possible, then soaking in milk. Stains from cream and other forms of grease can be washed out in cold water, followed with warm water and soap.

White cotton and white linen materials can be bleached by exposing while damp to the sunshine. If left out overnight the bleaching process is made effective by the moisture furnished by the dew and frost. A stream of steam from the teakettle may also help the bleaching process.

Some colors are set by the addition of a small amount of acid to the first water in which they are soaked, while others are set by the use of salt. It is necessary to try a small amount of the material before dipping in the entire garment in order to be sure of results. Vinegar should be used for blues; use one-half cup to one gallon of water. Salt is most effective for browns, blacks, and pinks. In most cases two cups of salt to one gallon of cold water will be enough.

PRELIMINARY PLAN.

The towels used for drying dishes or the linen used for some school entertainment may have become stained with coffee, fruit, or some other substance. Make this the basis of a lesson and have the girls bring other things from which they wish to remove stains. Each girl should have an article from which to remove a stain. Let this lesson be preliminary to the lesson on laundry work.

METHOD OF WORK.

Examine the various articles at hand from which stains are to be removed. Discuss the method of removal and have each girl work on her own stain until it is as nearly removed as possible.

LESSON XIV. WASHING DISH TOWELS, SCHOOL CURTAINS, ETC.

SUBJECT MATTER.

Dish towels should be thoroughly washed out at least once a day. Wash one piece at a time (cleanest first) in warm soapy water and rinse in clear water in another pan. Hang up in the sun, if possible, so that the air will pass through. Boil at least once a week in soapy water to keep fresh and white. Sunshine and fresh air are valuable for the purpose of bleaching and purifying.

Wash the school curtains in hot, soapy water; boil, rinse, and blue slightly. A small amount of thin starch may be desirable for the curtains. A thin starch can be made as follows:

RECIPE FOR THIN STARCH.

$\frac{1}{2}$ cup starch.

$\frac{1}{4}$ teaspoon lard.

$\frac{1}{2}$ cup cold water.

3 pints boiling water.

Add the cold water to the starch and lard, stir until smooth, then add the boiling water slowly, stirring constantly. Boil for several minutes in order to cook the starch thoroughly; then add one pint of cold water and a small amount of bluing. Dilute if necessary.

Hang the curtains in the sun to dry, shaking well before putting on the line and folding the edge over at least 6 inches. Be sure to have a clean line. When dry, fold carefully. A short time before ironing, sprinkle well.

PRELIMINARY PLAN.

It may be desirable to give this lesson earlier in the course, if cooking lessons are being given and dish towels are in use, or if the school curtains are badly soiled. Other articles may be washed if time and facilities permit.

METHOD OF WORK.

Discuss briefly the need for laundry work and the general principles. Have the girls each take a turn washing the towels or curtains; examine the article after it is washed and give careful directions for the boiling, bluing, and starching. While these processes are being completed, have some of the girls prepare the line. Have two girls appointed to bring the towels in off the line before they go home from school.

LESSON XV. IRONING.

SUBJECT MATTER.

To do good ironing it is necessary to have a firm, unwarped ironing board. This should be covered with some thick woolen material and a white muslin cover that is clean, smooth, and tightly drawn. The thick cover should be tacked on, while the top cover should be pinned so that it can be easily taken off for cleaning. A heavy holder should be provided for handling the irons. Irons should be clean and smooth. Paper should be kept at hand to keep the irons clean and a piece of beeswax, sandpaper, or salt should be provided for keeping them smooth. A small cloth should be used to wipe off the iron after using the beeswax. A newspaper should be spread on the floor to protect any pieces that may hang down that far while being ironed. The coarser towels should be ironed first, as the irons grow smoother the longer they are used. Starched pieces should not be

ironed until the irons have become very hot. Every piece should be ironed until perfectly dry. If the article is first laid smooth it will be easier to iron it and keep it in shape. As soon as ironing is completed the articles should be hung up to air out well.

PRELIMINARY PLAN.

Arrange to have the ironing lesson just as soon after the laundry lesson as possible. It will probably be easy to borrow the necessary equipment from near-by homes. Each girl can be appointed to bring something that will contribute toward the equipment and one girl can be appointed to have the fire ready and another to put the irons on to heat before the lesson hour.

METHOD OF WORK.

Call the girls together early in the morning or at some other time previous to the lesson period and give them directions for sprinkling the articles to be ironed. When the class hour comes, demonstrate the method of ironing, folding, and hanging the articles and have the girls take turns doing the work.

LESSONS XVI AND XVII. CARE OF THE BABY.

SUBJECT MATTER.

Because young girls are fond of little children and must often help their mothers with their baby brothers and sisters, they should know how to care for them. It is essential that they understand the following points: The little body needs protection. The head is soft and the brain may be injured by hard bumps or pressure. The skin is tender and is easily irritated by the bites of insects, friction, etc. Kicking, wiggling, etc., are necessary to the development of the baby's muscles, but the baby should not be played with all the time for it is well for it to lie quietly a portion of the time while awake. It should not be made to sit up until ready to do so. A desire to creep should be encouraged. Standing or walking should not be taught the baby until it tries to do so for itself and then it must be helped very carefully.

The baby should have plenty of fresh air and should be allowed to spend much of its time out of doors. In cold weather the baby must be warmly covered and sheltered from high winds. Its eyes should always be protected from strong sunlight.

Regular hours should be observed for sleep and the baby should be put to bed early at night. If the house is not well screened, a mosquito bar should be put over the baby's crib. Clothing should be light and loose, so that the body can move freely.

Perfect cleanliness is necessary to keep the baby's skin in good condition. A daily bath should be given. A morning hour is usually the best time for bathing the baby, midway between the meals. The baby should be taught to use the chamber before the bath and after the nap. Everything should be ready before the baby is undressed. The room should be very warm. The water should be only moderately warm and should be carefully tested to make sure that it is not too hot. The towels and covers for the baby should be at hand. The head and feet should be washed first, and the body soaped before putting the child into the bath. Little soap should be used for washing the baby, for even the best soap is strong and apt to irritate the delicate skin. The bath should be given quickly, the body wiped very dry and covered as soon as washing is completed.

The baby should be fed in small quantities at regular intervals and given plenty of cold water to drink. Not until 11 or 12 months of age should it be given solid or semisolid food. Even then milk should continue to form the basis of the child's diet, and of this a considerable quantity should be used—about a quart a day from the twelfth month on. As the child grows older a more varied diet will be necessary. The most hygienic methods of food preparation must always be observed.

Certain foods should never be given: Fried foods, pastries, condiments, pickles, preserves, canned meats, fish, pork, sausage, cheap candies, coarse vegetables, unripe and overripe fruits, stimulants, foods treated with a preservative or coloring matter, and half-cooked starches.

PRELIMINARY PLAN.

The teacher should talk with the girls in order to see what points in connection with the care of the baby it is necessary for them to know in order to do their work at home intelligently.

METHOD OF WORK.

It will probably not be possible to have anything more than a class discussion of the points in question, but the girls' home experiences ought to make this discussion vital. If there is a nurse in the neighborhood who can be secured to give one lesson on the care of the baby, the teacher should supplement her own lessons with an additional lesson by the nurse.

In connection with the care of the baby the teacher will be able to secure help from bulletins entitled:

Infant Care, Care of Children, Series No. 2, Bureau Publication No. 8, Children's Bureau, United States Department of Labor, Washington, D. C.

Food for Young Children, Farmers' Bulletin 717, Division of Publications, Department of Agriculture, Washington, D. C.

The Care of the Baby, United States Public Health Service.

The Summer Care of Infants. United States Public Health Service.

LESSON XVIII. COST OF FOOD, CLOTHING, AND HOUSE.**SUBJECT MATTER.**

It is of great importance that all children learn the value of property in an elementary way. This will prepare them for the knowledge of the cost of living that is essential. They can learn that the cost of food can be decreased by keeping gardens and by proper choice, care, and handling of foods; that care of clothing will reduce this item of expense; and that the owning of one's own house and lot is something worth working for in order to reduce the cost of rent.

PRELIMINARY PLAN.

The teacher will have to acquaint herself thoroughly with conditions in the community so that she can talk intelligently with the girls, emphasize the right points, and give them constructive help.

METHOD OF WORK.

Begin with a discussion of the cost of food; how much the children earn or spend during the week; and why it is worth while to cook and sew well, and look after property. Continue such discussions from time to time in connection with other school work.

LESSON XIX. HOW TO KEEP ACCOUNTS.**SUBJECT MATTER.**

It is well for one to keep a written record of all money received and all money spent. Children should be taught to do this as soon as they are big enough to have money in their possession. A simple little notebook in which all expenditures are entered on the right side and all receipts on the left side, with the balance drawn up each week or month will prove an easy and satisfactory method of keeping accounts. If the little girl learns to do this with her pennies, she will be better able to take care of the more important household accounts when she is in charge of a home. However, there will be no good incentive for her to keep accounts unless she is endeavoring to save for some good purpose. If she learns to save for the future purchase of a book, a dress, or some little treat, she will feel that her account keeping is worth while. As a housekeeper she will appreciate the importance of saving for some future good to the family—a better house, school for the children, etc.

PRELIMINARY PLAN.

In order to make the lesson on keeping accounts of vital interest, introduce it at a time when the girls in the class are saving for some specific purpose—material for a dress to be made in sewing class, refreshments for a party for their mothers, a school library, or something else that will be a pleasure and help in school work.

METHOD OF WORK.

After discussing the possible sources of income of the girl and of her family, and the means of increasing and taking care of that income, discuss simple methods of keeping accounts, illustrate them on the blackboard, show how to balance the accounts, and see that each girl has a small book for the purpose. It may be necessary to make or to rule this book as a portion of the class exercise.

LESSON XX. CARE OF THE EXTERIOR OF THE HOUSE.

SUBJECT MATTER.

Closely allied to the housekeeper's work within the home is the care of the exterior of the house and its surroundings. It is absolutely necessary that the grounds be kept neat and clean. In addition to this they should be made attractive by the careful selection of a few shrubs rightly placed. While the gardens at the rear of the house may be planned solely for the pleasure and use of the family, in planning the lawn at the sides and front of the house the neighbors and passers-by must be considered. The grounds should be a picture of which the home is the center, the shrubs being grouped to frame the picture. In order to do this, the center of the yard should be left open with an occasional tree or shrub, so placed and pruned that it will not hide the house. Shrubs and vines should be planted close to the house to break the severe line between the house and lawn, and so utilized as to hide the sheds. The arrangement and varieties of shrubs and vines should harmonize both at the front and sides of the house. One, two, or three kinds should be chosen as a basis. If a shrub is planted at one corner of the house, the same variety should be planted at the other end. Similarly, the same sort of vine should be planted on both sides of the front porch. Care should be taken that vines do not cut off the supply of light and air from the interior of the house.

The following list of shrubs and vines for planting close to the house may be suggestive:

Shrubs: Barberry, dentzia, forsythia, hydrangea, Japanese quince, dwarf euonymus, lilac, privet, spirea, snowball, cape jasmine, sweet shrub.

Vines: Boston ivy, clematis, English ivy, honeysuckle, wistaria, climbing roses, climbing euonymus.

The center of the lawn should be left free of unnecessary walks, drives, piles of stones, or pieces of statuary. A few flowers should be planted among the shrubs to give color at different seasons.

The exterior of the house itself must be considered, if the picture framed by the shrubs and vines is to be a pleasing one. The house should be painted in a soft brown or dark green to blend with the landscape of oaks and pines. The paint will help to preserve the

house, but its color must be carefully chosen in order to give a pleasing effect.

The back yard should be used for vegetable gardens with flower borders. For this purpose a deep, rich soil is necessary and every square foot of space should be utilized. Every family should learn to make use of an increased number of vegetables and fruits and to cook them in a variety of ways. No crops should be allowed to go to waste. Intensive 12-months gardening should be practiced. A family of five people could be entirely provided with vegetables from a garden less than 75 by 50 feet.

With the exception of sweet peas, all flowers needed for picking purposes should be grown in the flower borders in the back yard. Sweet peas should be planted in rows in the vegetable section. The attractiveness, as well as the usefulness, of the flower borders depends upon the choice and arrangement of flowers. The flowers should be chosen as to height of plants, color of blooms, and seasons of blooming. The tallest plants should be placed at the back of the border; for a border 6 feet wide none of the plants need be over 5 feet. There can be a riot of colors if the flowers are arranged in clumps of four to six throughout the entire length of the border. In a well-planned flower border some flowers should be in bloom each month. Hardy perennial flowers should predominate, with enough annual flowers to fill up the spaces and hide the soil. A surprisingly large number of plants will be needed. Perennial flowers should be started in seed beds in March and the plants transplanted into the flower borders in October. Annual flowers should be started in flats in early spring and the plants transplanted into the flower borders in April. The well-tried, old-fashioned flowers will give the best satisfaction. Every four years the flower borders need to be spaded, well manured, and replanted.

LISTS OF FLOWERS FOR BORDERS.

Perennials.—Bleeding heart, carnations, chrysanthemums, columbine, coreopsis, dahlias, gaillardias, golden glow, iris, larkspur, oriental poppies, peonies, phlox, pinks, platycodon, snapdragon.

Biennials.—Forget-me-not, foxglove, Canterbury bells, hollyhock, sweet-william, wallflower.

Annals.—African daisy, ageratum, aster, calendula, calliopsis, balsam, candytuft, cornflower, cosmos, marigold, mignonette, nasturtium, petunia, poppy, stock, sweet alyssum, sweet pea, verbena, zinnia, annual phlox, red sunflower, cut-and-come-again sunflower.

Each home gardener will need to study garden literature to help solve the garden problems, for the day has passed when one needs only to scratch the soil with a shell, plant the seeds and receive an abundant crop. To-day successful gardening depends upon intelligent management of the soil and crop, and upon persistent labor.

The Department of Agriculture at Washington, D. C., publishes many helpful farm bulletins that may be secured free of charge.

Many State experiment stations publish bulletins on vegetable growing. These bulletins are sent free of charge to the people within the State on application to the director of the experiment station. A few of the bulletins published by southern experiment stations are:

The Home Vegetable Garden.—Virginia Truck Experiment Station, Norfolk, Va.

Truck Growing in North Carolina.—Department of Agriculture, Raleigh, N. C.

Vegetable Gardening.—Georgia Experiment Station, Experiment, Ga.

Farm Gardens.—Division of Extension, College of Agriculture, University of Tennessee, Knoxville, Tenn.

Books on gardening that are useful for the home garden.

Card.—“Bush Fruits.” Price, \$1.50. The Macmillan Co., New York City.

Duncan.—“When Mother Lets Us Garden.” Price, 75 cents. Moffat, Yard & Co., New York City.

Ely.—“A Woman's Hardy Garden.” Price, \$1.75. The Macmillan Co., New York City.

French.—“The Beginner's Garden Book.” Price, \$1. The Macmillan Co., New York City.

Lloyd.—“Productive Vegetable Garden.” Price, \$1.50. Lippincott Co., Philadelphia.

The United States Bureau of Education through its division of school and home gardens sends out literature and gives direct assistance to those schools that wish to have the home-garden work carried on by their pupils.

PRELIMINARY PLAN.

The teacher should visit the homes of all the children in order to make herself familiar with the condition in which their grounds are kept. She may be able to secure permission from one of the housekeepers to use her grounds for the practice place for the lesson, or it may be more desirable to give this lesson at the school and to conduct a school garden as a model home garden.

METHOD OF WORK.

Discuss the arrangement and care of the home or school grounds. Have the class clean up the lawn and garden chosen for the lesson, supervising the work carefully. Assign the cleaning up of the home lawns or work in the home gardens for the coming week. Let this lesson serve as a means of interesting the girls in home gardening, if that has not already been taken up, or of emphasizing the relation of gardening to the housekeeper's work if they are already interested in gardening.

TWENTY LESSONS IN COOKING.

For the Rural Schools.

OUTLINE OF THE COURSE.

- Lesson I. Discussion of foods and cooking. Management of the kitchen stove. Cooking by dry heat. Baked vegetables or fruit.
- Lesson II. Water and mineral matter in vegetables. How to prepare and serve uncooked vegetables, lettuce, cress, cabbage, etc. Cooking by moist heat. How to boil, season, and serve beet tops, turnip tops, cabbage sprouts, kale, spinach, or other vegetable greens.
- Lesson III. The value of carbohydrates in the diet. Potatoes as a source of carbohydrates. The choice, cost, care, composition, food value, and cooking of sweet potatoes and white potatoes. Baked squash. Steamed squash.
- Lesson IV. Fruits—their food value and use. Reasons and rules for canning. How to can and use such vegetables as beets, beans, tomatoes, and carrots, and such fruits as figs, grapes, muscadines, apples, and peaches. The drying of fruits and vegetables.
- Lesson V. Fats and oils. Vegetables, continued. Preparation of white sauce to serve with vegetables. How to boil, season, and serve such vegetables as lima or butter beans, string beans, cowpeas, onions, okra, cabbage, collards, corn, beets, turnips, or carrots.
- Lesson VI. Cereals—kinds, composition, care, and general rules for cooking. Oatmeal, cracked wheat, hominy grits, corn-meal mush, or rice. Fruits to serve with cereals—stewed prunes, stewed apples, or apple sauce.
- Lesson VII. Classification of foods, reviewed.
- Lesson VIII. The planning and serving of meals.
- Lesson IX. Milk. Care, cost, and food value of milk. The value and use of sour milk—cottage cheese, clabber. Rice or corn starch pudding (plain, caramel, or chocolate).
- Lesson X. Soups. Cream soups. Cream of carrot, potato, or onion soup; green pea or cowpea soup. Toast, croutons, or crisp crackers to serve with soup.
- Lesson XI. Eggs. Food value and general rules for cooking. Eggs cooked in shell, poached, scrambled and omelet.
- Lesson XII. Simple desserts. Custards.
- Lesson XIII. Batters. Corn bread and hoe cake.
- Lesson XIV. Batters (continued). Methods of making batters light. Use of sour milk and soda. Egg corn pone and corn muffins. Baking-powder biscuits.
- Lesson XV. Meat. Composition and food value. How to make tough cuts palatable. Pork chops with fried apples. Beef or mutton stew with vegetables and dumplings. Rabbit stew. Bacon.
- Lesson XVI. Baked pork and beans or baked cowpeas. Corn dodgers.
- Lesson XVII. Butter cakes. Plain yellow cake. Cocoa, coffee, tea.
- Lesson XVIII. Yeast bread.
- Lesson XIX. Serving simple dinners without meat. Baked omelet, macaroni and cheese.
- Lesson XX. Sugar. Food value and cooking. The use of peanuts in candy. Peanut cookies, or peanut, molasses, or fudge candies, to be made for a special entertainment.

SUGGESTIONS FOR THE TEACHER.

The teacher should learn how the children in her school live in their own homes, what foods they use, what foods they raise, and how they prepare and serve their foods. The instruction given in the lessons should be based on this knowledge. Possibilities for the improvement of accepted methods should be considered. Those foods should be used in the recipes which the children can afford to use at home. They should be encouraged to raise other foods in their gardens and to keep chickens, pigs, and cows.

Elementary principles of nutrition and sanitation should be taught. Simple meals should be planned with plain but well-cooked dishes. Variations should be suggested and the value of a mixed diet emphasized. Care should be taken not to waste time on points that are unrelated to the homes of the girls, except as such points may be necessary to raise their ideals.

All the work should be carefully done. Sanitary handling of food and care in storage of foods should be insisted upon. Careful attention should be given to the dish washing, care of dish towels, etc., emphasizing those points in sanitation involved. The girls should be drilled faithfully in all points essential to the handling of anything that comes in contact with the food.

Proper methods of sweeping and cleaning should be employed and thoroughness practiced in every detail of the work. Thorough drill in these processes should be given.

The order in which the lessons are to be given will be regulated in part by the season of the year in which they occur, the locality, the foods obtainable, and any special local needs. However, care must be taken that the lessons occur in proper sequence, so that the pupils will see the relation of one to the other and will appreciate the value of each. It may be necessary to combine two lessons or to give only part of a lesson. In some of the lessons more recipes are suggested than could be prepared in a brief period. In every case the choice of recipe will have to be made by the individual teacher. Wherever possible, simple experiments to show the composition and effect of heat on food should be used.

No attempt has been made to give a complete set of recipes. Those included are chosen to illustrate the subjects to be discussed in the lessons. A few have been taken from the Farmers' Bulletins and from circulars of the Extension Service of the Department of Agriculture. The others have been carefully tested and used with satisfactory results. The teacher who desires to make use of a greater number of recipes will do well to supply herself with one of the textbooks listed. Level measurements should be used in the preparation of all the recipes and all the directions should be carefully followed.

The first few lessons are more fully outlined than the others, furnishing suggestions for methods of procedure that can also be adapted to the later lessons. The teacher should have a detailed plan for every lesson, outlining her method of work, the leading questions for the discussion, and the home assignment which she desires to make.

Foods that are in common use are suggested for the lessons outlined. There will necessarily be exceptions to their use in different

localities. If foods used in the homes are harmful because of the manner in which they are prepared, the teacher should do all in her power to correct the custom, but she must be careful not to be too radical. If the lessons given are not repeated by home practice, time will be practically wasted. Simple meal service should be introduced wherever possible, and as much instruction on the furnishing and care of the kitchen should be included as time permits.

By the time the course is completed, the girl should be able to keep her kitchen in sanitary condition, and she should have a knowledge of food values and of the processes of cooking sufficient to provide simple, wholesome meals for her family.

For the teaching of food values, it will be helpful to secure the set of 15 food charts, that can be obtained for \$1 from the Superintendent of Documents, Government Printing Office, Washington, D. C.

The State Department of Education or the State university, college, or normal schools, through their extension departments, may issue material that will be of help to the rural teacher in planning her lessons.

The teachers will find it helpful to secure and study the Farmers' Bulletins listed below. Single copies of these bulletins can be obtained free by writing to the Division of Publications, Department of Agriculture, Washington, D. C.

FARMERS' BULLETINS.

- No. 34. Meats: Composition and cooking.
- No. 142. Principles of nutrition and nutritive value of food.
- No. 203. Canned fruits, preserves, and jelly.
- No. 249. Cereal breakfast foods.
- No. 256. Preparation of vegetables for table.
- No. 293. The use of fruit as food.
- No. 359. Canning vegetables in the home.
- No. 363. The use of milk as food.
- No. 389. Bread and bread making.
- No. 391. Economical use of meat in the home.
- No. 487. Cheese and its economical uses in the diet.
- No. 521. Canning tomatoes at home and in club work.
- No. 535. Sugar and its value as food.
- No. 559. Use of corn, kafir, and cowpeas in the home.
- No. 565. Corn meal as a food and ways of using it.
- No. 653. Honey and its uses in the home.
- No. 712. School lunches.
- No. 717. Food for young children.
- No. 807. Bread and bread making in the home.
- No. 808. How to select foods. No. I. What the body needs.

	Approximate cost.		Approximate cost.
Baking dish.....	\$0. 30	Molding board	\$0. 35
Bowls, mixing, 2.....	.60	Muffin tins, 2 sets.....	.20
Bread board.....	.25	Oil stove.....	1. 15
Bread box.....	.25	Omelet pan.....	.25
Broom.....	.35	Oven.....	.85
Brush, scrubbing.....	.10	Pail, garbage (covered).....	.90
Brush, vegetable.....	.10	Pails, water, 2-quart, 6-quart.....	.80
Can opener.....	.10	Pan, baking.....	.20
Containers, lard pails or cans.....	.	Pan, cake.....	.10
Corkscrew.....	.10	Pans, bread, 4.....	.40
Cups, measuring, 2.....	.20	Pans, pie, 2.....	.10
Cups, mixing, 2.....	.10	Pitcher, 2-quart.....	.30
Cutters for biscuits or cookies.....	.10	Plates, 6.....	.30
Dishcloths, 2.....	.10	Ramakin.....	.05
Dish pans, 2.....	.40	Rolling pin.....	.10
Dish towels, 6.....	.90	Salt and pepper shakers.....	.30
Double boiler.....	.75	Saucepans, 3 (1-quart, 2-quart, 3- quart, with lids).....	.60
Dust cloths, 6.....	.40	Soap dish.....	.10
Dustpan and brush.....	.40	Spatula.....	.20
Egg beater.....	.10	Strainer.....	.15
Flour sifter.....	.15	Tablespoons, 6.....	.30
Forks, 6.....	.60	Teakettle .....	.40
Frying pan.....	.90	Teaspoons, 6.....	.30
Glass jars, 6 Mason.....	.60	Tray.....	.15
Grater.....	.10	Wooden spoons, 2 small.....	.30
Hand basin.....	.15		
Jelly glasses, 6.....	.15		19. 85
Kettle, 6-quart, with lid.....	.40		
Knife, bread.....	.30	<i>Serving dishes.</i>	
Knife, butcher.....	.15	Bowl.....	Plates.
Knife, paring.....	.20	Cream pitcher.....	Sugar bowls.
Knives, case, 6.....	.60	Cups and saucers.....	Tablecloth.
Meat grinder.....	.70	Knives and forks.....	Tumblers.
Mop.....	.40	Napkins.....	

FOODS AND COOKERY.

A suggestive list of textbooks for use in elementary rural schools.

- Austin, Bertha J.—“Domestic Science.” Price, Vol. 1, 60 cents; Vol. 2, 60 cents. Lyons & Carnahan, Chicago.
- Conley, Emma—“Principles of Cookery.” Price, 60 cents. American Book Co., New York City.
- Flagg, Etta P.—“A Handbook of Home Economics.” Price, 75 cents. Little, Brown & Co., Boston.
- Jones, Mary C.—“Lessons in Elementary Cookery.” Price, \$1. Lippincott Co., Philadelphia.
- Kinne, Helen, and Cooley, Anna M.—“Food and Health.” Price, 65 cents. The Macmillan Co., New York City.
- Lincoln, Mary J.—“The School Kitchen Textbook.” Price, 65 cents. Little, Brown & Co., Boston.
- Metcalf, Martha L.—“Food and Cookery.” Price, 95 cents. Industrial Education Co., Indianapolis.
- Morris, Josephine—“Household Science and Arts for Elementary Schools.” Price, 60 cents. American Book Co., New York City.
- Pirie, Emma E.—“The Science of Home Making.” Price, 90 cents. Scott, Foresman & Co., Chicago.
- Williams, Mary E., and Fisher, K. B.—“Theory and practice of Cookery.” Price, \$1. The Macmillan Co., New York City.

DETAILED LESSON PLANS FOR THE COURSE IN COOKING.

LESSON I. DISCUSSION OF FOODS AND COOKING.

Management of the Kitchen Stove. Cooking by Dry Heat. Baked Vegetable or Fruit.

SUBJECT MATTER.

Foods.—The body uses food to build and repair its tissues, to provide heat and energy, and to regulate body processes. Foods differ from one another in their composition and in their ability to perform the work of the body. These differences have led to the classification of foods into five groups, which are spoken of as the five food stuffs or food principles.

Cooking.—While some foods can be used as they occur in nature, most foods are made more acceptable by the application of heat. Heat softens the structure of vegetables and fruits, makes tender the tissues of meat, prepares starch for digestion, develops flavor in many foods, and destroys parasites and germs that may be present in food. The five food stuffs are differently affected by heat, some require slow cooking, others require intense heat. Hence, it is necessary to study cooking that each food may be properly prepared.

The stove.—A knowledge of the construction of the stove and the methods whereby heat is obtained is necessary if one is to be a successful cook. For all stoves three things are necessary—fuel, a supply of oxygen, and a certain degree of heat, known as the kindling point, whereby the fire is started. The supply of oxygen is regulated by dampers and checks so arranged as to admit or cut off the draft of air.

The creative dampers are doors or slides that come below the fire box. When open they admit the entrance of air, increase the draft and facilitate combustion.

The oven damper is a flat plate which closes the opening into the chimney flue to decrease the drawing of the draft. When the oven damper is closed, the heat from the fire remains in the stove and passes around the oven.

Checks are slides or doors higher than the fire box, which, when open, allow the cold air to pass over the fire, retarding combustion.

A stove is also provided with means for disposing of the ashes, soot, and the gases formed. All parts of the stove are so arranged that they can be kept clean.

See Twenty Lessons in the Care of the Home. Lesson I.

PRELIMINARY PLAN.

There should be provided for this lesson some fruit or vegetable in season (from the homes of the pupils, if possible) that can be cooked by dry heat. Each child may be able to bring an apple or a potato. The teacher should be sure to have an oven that can be well heated for baking, and to have the fire well started before the lesson begins, so that the oven will be ready for use. If there is no oven, a pan of ashes and hot coals can be arranged to surround the pan of apples in such a way that they will bake.

A lesson in geography and nature study should be correlated with the cooking lesson to give the pupils opportunity to study the source of foods and the reasons for cooking foods.

One of the pupils should write the recipes for the lesson on the blackboard before the lesson hour.

RECIPES.

Baked Apples.

Wash the apples, core them, and cut through the skin with a knife so that the apple can expand in baking without breaking the skin. Place the apples in a baking dish, and fill each center with sugar. Cover the bottom of the dish with water one-fourth inch deep and bake until the apples are soft (20 to 45 minutes), basting them every 10 minutes. Place them in a serving dish and pour the juice over them. Serve hot or cold.

Baked Sweet Potatoes.

Scrub potatoes carefully and place in a baking pan. Bake in a hot oven from 45 minutes to one hour. When soft, break skin to let steam escape. Serve in an uncovered dish.

See Farmers' Bulletin 256, Preparation of vegetables for the table. Farmers' Bulletin 293, The use of fruit as food.

METHOD OF WORK.

Discuss very briefly the food that is to be cooked and the method of cooking it. Have as many apples or potatoes baked as there are members of the class or as the baking dish will hold.

Assign tasks to special members of the class.

Put the vegetable or fruit in the oven as quickly as possible to bake.

While baking is in process take up a general discussion of foods and cooking, and a special discussion of the food which is being used and the method of cooking employed in the lesson.

Give as thorough a lesson on the stove and combustion as time permits. Examine the baked article and discuss methods of serving it, time for serving, etc.

Use the finished product for the school lunch or have it served nicely in the class, letting the pupils taste it. Encourage them to bring a dish from home to take the results of their work home for the family meal if a school lunch is not served, or if they do not need a lunch. Give careful directions for washing dishes and supervise the housework carefully.

(It may be necessary to go on with some other recitation before the baking is completed, in which case one member of the class should be appointed to watch the oven.)

Questions to serve as a guide in the development of the lesson:

What food have we on hand for use to-day?

Does this food need cooking? Why?

How shall we prepare it for cooking?

How shall we prepare the oven?

How shall we care for the fire?

How long will it be necessary to cook this food?

(Time the baking carefully and discuss more thoroughly at the close of the lesson.)

How can we tell when it is done?

How shall we serve it?

For what meal shall we serve it?

Of what value is it to the body?

How shall we wash the dishes?

Home assignment.—Pupils should prepare the baked dish at home and report their work at the next lesson.

LESSON II. PREPARING AND SERVING VEGETABLES.

Water and Mineral Matter in Vegetables. How to Prepare and Serve Uncooked Vegetables, Lettuce, Cress, Cabbage, etc. Cooking by Moist Heat. How to Boil, Season, and Serve Beet Tops, Turnip Tops, Cabbage Sprouts, Kale, Spinach, Mustard, or other Vegetable Greens.

SUBJECT MATTER.

Water.—All fluids and tissues of the body contain large quantities of water, therefore water is regarded as one of the most important foodstuffs required by the body. Practically all foods contain some water. The fresh vegetables and fruits provide the body with a high per cent of water.

Water is a valuable medium for cooking. As it heats, small bubbles are formed which continually increase in number and size, but gradually disappear. Some time before the boiling point is reached an occasional large bubble will rise to the surface and disappear. The water has then reached the simmering point, 185°, a temperature frequently made use of in cooking. When many bubbles form and break, causing a commotion on the surface of the water, the boiling point, 212°, has been reached.

Mineral matter.—Mineral matter is a second foodstuff that is needed by the body, but the amount required is very small. If a

variety of food is used there is generally enough mineral matter in the diet. Fruits and vegetables, especially fresh green vegetables, are comparatively rich in mineral matter. Mineral matter builds up the bones and certain tissues like hair, teeth, and nails, and regulates the body processes by keeping the blood and digestive fluids in proper condition.

Green vegetables.—The green vegetables hold an important place in the diet because they contain valuable mineral salts. They also contain a high percentage of water and considerable cellulose. With few exceptions they should be eaten raw, because the mineral salts, being soluble, are lost in the water in which they are cooked, and because the cellulose serves its purpose best in the crisp form. Cabbage is rendered much more difficult of digestion by cooking. Spinach, beet tops, etc., are more palatable cooked. The delicately flavored vegetables should be boiled in a very small amount of water, so that they need not be drained. Thus the mineral matter will be retained when the vegetables are served.

PRELIMINARY PLAN.

There should be provided for the lesson some fresh vegetables in season (from the home of the pupils, if possible), one that can be cooked by boiling, and one that can be served uncooked with a simple dressing.

One of the pupils should write the recipes on the blackboard before the lesson hour.

RECIPES.

Preparation of Fresh Green Vegetables.¹

Wash vegetables thoroughly, leaving in cold water to crisp, if wilted. Keep cool until ready to serve, then arrange neatly and dress with salt, vinegar, and oil as desired, or prepare a French dressing as follows:

French Dressing.

$\frac{1}{2}$ teaspoon salt.

1 tablespoon vinegar.

$\frac{1}{2}$ teaspoon pepper.

3 tablespoons salad oil.

Stir briskly until thoroughly combined and use at once.

Recipe for boiling and seasoning fresh, green vegetables.

Wash vegetables carefully, put on to cook in boiling water. Delicately flavored vegetables (spinach, celery, fresh peas, etc.) will require but little water and that should be allowed to boil away at the last. If spinach is stirred constantly, no water need be added. Starchy vegetables should be completely covered with water, and strong-flavored vegetables (as turnips, onions, cabbage, and cauliflower) should be cooked in a large amount of boiling water.

After vegetables have cooked for a few minutes salt should be added, one teaspoonful to each quart of water.

¹ It may be well to omit from this lesson the uncooked vegetable that is served in the form of a salad and to give it at some other time. It is not well to attempt to teach more than the girls can master thoroughly.

Cook the vegetable until it can be easily pierced with a fork. Let the water boil away at the last. If necessary to drain, do so as soon as the vegetable is tender. Season with salt, pepper, and butter ($\frac{1}{2}$ teaspoon salt, $\frac{1}{2}$ teaspoon pepper, and $\frac{1}{2}$ table-spoon butter to each cup of vegetable).

See Farmers' Bulletin 256, The preparation of vegetables for the table.

METHOD OF WORK.

Discuss the boiling of water and its value in cooking. Have the girls observe and describe the boiling of water.

If a new tin saucepan or other bright tin vessel is at hand to heat the water in, the changes which take place as the temperature increases will be more readily apparent and the girls will enjoy watching the process.

Discuss why one vegetable is to be cooked and the other served uncooked.

Emphasize the cleaning of the vegetable, its structure, composition, and the effect of the boiling water upon it.

After the vegetable has been put on to cook, discuss the method of seasoning or dressing the vegetable which is to be served uncooked, and have it prepared to serve attractively on the plates. Especial emphasis should be placed on the use of fresh, green vegetables.

Continue the discussion of vegetables, having the members of the class suggest others that can be prepared as a salad or cooked in the manner illustrated, writing the list on the blackboard for them to copy in their books.

When the cooked vegetable is tender have it drained, seasoned, and served, and serve the uncooked vegetable at the same time.

When ready for serving, have the pupils arrange their plates and forks carefully, then have them all sit down but the two who pass the two vegetables. Be sure that the pupils eat carefully and nicely. Emphasize housework as on previous day.

Questions to serve as a guide in the development of the lesson:

How shall we prepare our vegetables for serving?

Of what value is hot water in cooking food?

How must the vegetable be prepared for boiling?

Does this vegetable contain any water?

Will it be necessary to add any more?

Will it be necessary to cover the saucepan?

How hot must the water be kept? How can one tell when the water is sufficiently hot?

How can we determine when the food has cooked long enough?

How shall we serve this vegetable?

How does boiling compare with baking?

In time? In flavor? In amount of fuel used? In amount of work necessary?

Home assignment.—Practice in the boiling and serving of vegetables.

LESSON III. THE VALUE OF CARBOHYDRATES IN THE DIET.

Potatoes as a Source of Carbohydrates. The Choice, Cost, Care, Composition, Food Value, and Cooking of Sweet Potatoes and White Potatoes, Baked Squash, Steamed Squash.

SUBJECT MATTER.

Carbohydrates.—A third class of food stuffs required by the body is known as the carbohydrates or sugars and starches. This class of foods is used as fuel for the production of heat and energy in the body. Excess of carbohydrates may be stored in the body as fatty tissue.

Potatoes.—Potatoes are a cheap source of carbohydrates. They are also valuable for their mineral matter and for the large quantity of water which they contain. Three-fourths of the potato is water. The framework of the potato has a basis of cellulose, which is an indigestible carbohydrate material. Potatoes have only a small amount of cellulose, however, and they are comparatively easy of digestion. When dry and mealy they are most easy of digestion. Sweet potatoes contain a larger per cent of sugar than white potatoes and the cellulose in sweet potatoes softens more quickly when cooking. When used for a meal, potatoes should be supplemented by some muscle-building food, such as milk, cheese, eggs, fish, or meat.

PRELIMINARY PLAN.

At some previous period the teacher should have discussed with the girls the use of potatoes and learn from them the various ways in which they cook them in their homes. She should determine upon some recipes for the lesson that will increase the variety of ways in which potatoes can be served and will improve the methods used.

Each girl should be asked to bring one or two potatoes for the lesson. It will be well to cook in class the kind of potato that is cheapest and most commonly used in the community. The best methods of cooking and means of securing variety should be emphasized.

RECIPES.

Mashed Potatoes.

6 potatoes.

 $\frac{1}{2}$ cup hot milk or cream.

1 tablespoon butter.

1 teaspoon salt.

Wash and pare potatoes, boil, drain, dry, and mash (with a potato masher) in the saucepan in which they were cooked. Beat them until very light and creamy; add hot milk, butter, and salt and beat again, reheat, and serve. Serves 6 to 8.

Browned Potatoes.

Wash, scrub, and pare potatoes of uniform size. Parboil 10 minutes, then put in dripping pan with meat or on a rack in a baking pan.

Baste with fat every 10 minutes when meat is basted.

Allow about 40 minutes for the potatoes.

Experiment to show presence of starch in potatoes.

Scrub and pare a potato. Examine a thin cross section.
Grate the potato. Remove the coarse shredded portion. Examine.
Examine the liquid and note any sediment.
Heat the liquid and stir until boiling. How has it changed?
Examine portion of grater. How has the color changed? Why?

Fried Sweet Potatoes.

Cut cold boiled potatoes in one-fourth inch slices, season with salt and pepper, put into a hot, well-greased frying pan, brown on one side, turn and brown on the other side.

Glazed Sweet Potatoes.

6 sweet potatoes.
 $\frac{1}{2}$ cup sugar.

4 tablespoons boiling water.
1 tablespoon butter or other fat.

Scrub, pare, and boil potatoes 10 minutes in salted water; drain, cut in halves lengthwise and put into a buttered baking pan. Make a sirup of sugar and water, boil 3 minutes, add butter. Baste potatoes with sirup, put into a hot oven, cook 15 minutes, or until browned, basting every 5 minutes. Serves 8 to 10.

Steamed Squash.

Prepare squash as for baking, put in steamer over boiling water, and cook 30 minutes or until soft. Then scrape squash from shell, mash, and season with butter, salt, and pepper.

Baked Squash.

Wipe shell of squash, cut it into pieces for serving, remove seeds and stringy portion, place in a dripping pan, and bake in a slow oven three-quarters of an hour (until tender). Serve at once.

See Farmers' Bulletin 256, The preparation of vegetables for table.

METHOD OF WORK.

Discuss the composition and structure of the potato. Read over and discuss the recipes that are to be used.

Make assignments for work. After the potatoes have been put on to cook, have the class examine a raw potato, following the directions given.¹

If one of the recipes requires the use of the oven, be careful to have the potatoes for it prepared first and as quickly as possible. It may be necessary to proceed with another class, assigning one pupil to take care of the baking. Special attention should be given to careful serving of the potatoes.

Home assignment.—Before the next lesson each pupil should be able to report that she has cooked potatoes at home, using the recipes learned in class.

¹ Squash is another vegetable containing a high percentage of carbohydrate. The recipe for squash can be prepared at this time or made use of in some other lesson.

LESSON IV. FRUITS AND VEGETABLES.

Food Value and Use of Fruits. Reasons and Rules for Canning. How to Can and Use such Vegetables as Beets, Beans, Tomatoes, and Carrots, and such Fruits as Figs, Grapes, Muscadines, Apples, and Peaches. The Drying of Fruits and Vegetables.

SUBJECT MATTER.

Fruits impart palatability and flavor to other foods and exercise a favorable influence upon the digestive organs, though their food value is low. They contain a high percentage of water and only a small percentage of nutrients. Most fruits are eaten raw. Raw fruits are exceedingly valuable to the body because of the fresh acids they contain. Cooking softens the cellulose of the fruit and, therefore, renders some fruits more easy of digestion. The cooking of fruit is of value chiefly for the purpose of preservation.

The drying of fruits.—Fruits are dried so that they may be preserved for use. Bacteria and molds, which cause the decay of fruits, need moisture for development and growth. If the moisture in fruits is evaporated, the fruits will keep indefinitely. Dried fruits and vegetables can be easily and inexpensively prepared, therefore the practice of drying is feasible if one is so situated that the fruit or vegetable can be exposed to the hot sun in a clean, dry place. When dried fruits are to be used, they must be washed thoroughly and soaked for several hours, or overnight, in water, so as to restore as much water as possible. They should be cooked until soft in the same water in which they are soaked.

Canning and preserving.—Simple methods of preservation are desirable in order that vegetables and fruits be made of value for a longer period of time than through their ripening season. Canning is one of the methods most commonly employed in the home, for it is easily done, and canned fruits will keep indefinitely. Fruit which is to be canned is first sterilized by boiling or steaming, in order to destroy all germs and spores. This can be adequately accomplished by boiling 20 minutes, but a shorter time is sometimes sufficient. All germs must also be destroyed on the cans and on everything which comes in contact with the food in order to insure complete success. This will likewise require 20 minutes boiling or steaming. Jars, tops, dipper, and funnel should all be placed in cold water, heated until water comes to the boiling point, and left in the water until just before sealing. It will be sufficient to dip the rubbers into the boiling water. After the fruit has been put into the can, it must be sealed so that it is perfectly air-tight. In order to do this, it is necessary to have good tops, with new, pliable rubbers, and to fit them tightly.

When the jar is to be filled, it should be placed on a board or wooden table, or on a cloth wrung out of hot water, and filled to overflowing.

Sugar is not essential to sterilization and is used only to improve the flavor. Both fruits and vegetables can be canned without sugar. However, fruits canned with a large amount of sugar do not spoil readily, for germs develop slowly in a thick sirup.

Methods of canning.—The simplest method of canning is the open-kettle method employed for small, watery fruits, such as berries, grapes, tomatoes, etc. The fruit is boiled in an open kettle (which permits of the evaporation of some of the water in the fruit) and transferred at once to a sterilized jar which is immediately sealed. The open-kettle method of canning is not satisfactory for those vegetables containing only a small amount of acid, nor is it satisfactory for all fruits. A safer method and one that secures more complete sterilization without serious change of flavor in the fruit is that known as the cold-pack method. After being transferred to the cans the vegetable or fruit is subjected to an additional period of heating of considerable length, or to three periods of briefer length on three successive days. If the three periods of sterilization are used, the process is known as the intermittent method.

The single process method is described in the recipe for canned beets. The intermittent process proves more satisfactory for canned beans.

PRELIMINARY PLAN.

The teacher should ascertain what fruits and vegetables are most abundant and select those that the class can provide for canning.

Each girl should be asked to bring some vegetable or fruit, some granulated sugar, and a jar in which to can her fruit. If the school does not possess enough kettles or saucepans in which to do the cooking, kettles or saucepans may be borrowed from the homes.

Only one fruit or one vegetable should be taken up at a time, for the preparation necessarily varies slightly and the different methods will prove confusing. It is not necessary to confine the choice of fruits and vegetables to those mentioned in the recipes included. The teacher will find it necessary to base her instruction on the products of the particular time and place of the lesson. The principles of canning should be taken up at some other period, if possible, that the cooking lesson may be devoted entirely to practical work.

RECIPES.

Canned Tomatoes.

(Open-kettle method.)

Scald and peel the tomatoes. Boil 20 minutes. Sterilize the jars, covers, and rubbers. Stand jars on a cloth in a pan of hot water. Fill jars with hot tomatoes, being careful to fill to overflowing, and to expel all air bubbles from the jar. Adjust rubber and cover. Seal. Allow to cool. Test, label, and set away in cool, dry, dark place.

Canned Grapes.

(Open-kettle method.)

6 quarts of grapes.

1 quart of sugar.

1 gill of water.

Squeeze the pulp of the grapes out of the skins. Cook the pulp 5 minutes and then rub through a sieve that is fine enough to hold back the seeds. Put the water, skins, and pulp into the preserving kettle and heat slowly to the boiling point. Skim the fruit and then add the sugar. Boil 15 minutes. Put into jars as directed.

Sweet grapes may be canned with less sugar; very sour grapes may require more sugar.

Canned Peaches.

(Intermittent process.)

Use firm, solid fruit. Peel and cut in half. If cling-stone peaches are used, they may be canned whole. Fill each jar as the peaches are peeled and add water so that they will not discolor. When the jar is entirely filled, put on the rubber and the lid, but do not fasten the lid down. Then place the jar on a rack or folded cloth in a large kettle that can be closely covered. Put in enough water to reach up several inches on the jars, cover the kettle, and bring the water to the boiling point. When hot, lift the lids and add sugar, if it is to be used, from one-fourth cup to one cup of sugar for each quart of fruit. When the boiling point is again reached, boil for 10 minutes. Fasten down the lids and boil for 10 minutes longer. Set in a place free from drafts. On two successive days return the jars to the kettle and boil for 20 minutes. Do not loosen the lids after the jars have been sealed.

Canned Beets.

(Single process.)

Boil the beets until they are three-fourths done and the skins come off easily. Remove the skins and pack the beets in a jar carefully. Cover with boiling water, to which one tablespoon of salt is added for each quart, put the top on the jar, but do not fasten it down. Place the jar on a rack or a folded cloth in a large kettle that can be closely covered. Pour enough water into the kettle to reach within 2 inches of the top of the jar, cover the kettle, bring to the boiling point, and boil 15 minutes, then fasten the lid on securely and boil for one and one-half hours or two hours. Put aside to cool in a place that is free from drafts. As the water around the jar boils down replenish with boiling water, never with cold.

Canned String Beans.

(Intermittent process.)

Wash and string fresh, tender beans. Put into a sack or wire basket and dip into boiling water for 10 minutes. Drain, cool slightly, and pack in jars, within 1 inch of the top. Add one-fourth teaspoonful of salt to each pint jar and fill with cold water. Put on the rubbers and lids, but do not fasten the lids down. Then place the jars on a rack or folded cloth in a large kettle that can be closely covered. Pour enough water into the kettle to reach up within 2 inches of the top of the jars, cover the kettle, bring to the boiling point, and boil for 15 minutes. Then fasten on the lids and boil for 45 minutes. As the water around the jars boils down replenish it with boiling water, never with cold water. Put to cool in a place that is free from drafts. On two successive days return the jars to the kettle without opening the lids and boil for one hour.

Farmers' Bulletins: No. 203, Canned fruits, preserves, and jellies; No. 266, Preparation of vegetables for the table; No. 359, Canning vegetables in the home; No. 521, Canning tomatoes at home in club work; United States Department of Agriculture Bulletin 123, Professional Paper. Extension course in vegetable foods. Supt. of Documents, Government Printing Office, Washington, D. C. Price 10 cents.

Dried Corn.

Pick the corn early in the morning. Immediately husk, silk, and cut the corn from the cob. Spread in a very thin layer on a board, cover with mosquito netting which is kept sufficiently elevated so that it will not come in contact with the corn, place in the hot sun and leave all day. Before the dew begins to fall take into the house and place in an oven that is slightly warm. Leave in the oven over night and place out in the sun again the next day. Repeat this process until absolutely dry.

String Beans.

String beans are hung up to dry and kept for winter use.

METHOD OF WORK.

If possible, let each girl can a jar of vegetables or fruit for her own home. If the class is large, let girls work in groups of two or three.

Begin the lesson with a very brief discussion of how to prepare fruit for canning.

Let the girls proceed with the practical work as quickly as possible. Demonstrate the method of filling and sealing the jars.

Assign the care of the jars and the intermittent canning on succeeding days to members of the class and hold them responsible for the completion of the work.

The drying of some vegetables can be undertaken at school and carefully followed from day to day. It will give the girls an interesting problem.

LESSON V. FATS AND OILS. VEGETABLES—(continued).

Preparation of White Sauce to Serve with Vegetables. How to Boil, Season, and Serve such Vegetables as Lima or Butter Beans, String Beans, Cow-peas, Onions, Okra, Cabbage, Collards, Corn, Beets, Turnips, or Carrots.

SUBJECT MATTER.

Fats and oils.—Butter and cottonseed oil belong to the class of foodstuffs known as fats and oils. They increase the fuel value of those dishes to which they are added.

Fats supply heat and energy to the body in concentrated form. For this reason they should be used in limited quantity. Fats undergo several changes during the process of digestion, and the excessive use of fat interferes with the digestion of other foods and throws a large amount of work upon the digestive organs. Cooked fats are more difficult for the digestive organs to use than uncooked fats. Other foods cooked with the hot fat are rendered difficult of digestion.

Vegetables.—Vegetables should be used when in season, as they are always cheapest and at their best then. They keep best if in a cold, dry, and dark place.

It is necessary to cook most vegetables, because they contain cellulose and raw starch, which are indigestible. In old or exceedingly large vegetables the cellulose may be very tough; hence long

cooking is necessary. They should be cooked only until they are tender. Longer cooking may destroy the flavor, render the vegetable difficult of digestion, and cause the color to change. In very young vegetables the cellulose is delicate, and if young vegetables do not contain much starch they may be eaten raw.

When cooked vegetables are served they are usually seasoned and dressed with butter or oil (for one cup vegetables use $\frac{1}{2}$ teaspoon salt, $\frac{1}{2}$ teaspoon pepper, and $\frac{1}{2}$ tablespoon fat or oil), or a sauce is prepared to serve them.

PRELIMINARY PLAN.

It may be well to have a preliminary lesson devoted to the simple experiments with flour, liquid, and fat, in order to determine the best method of combining white sauce. However, if the lesson period is of sufficient length a few of these experiments can be performed in connection with the lesson.

There should be provided for the lesson some vegetable that is improved by serving with white sauce, and sufficient milk, butter, or other fat, flour, and salt for the sauce and the experiments. Discuss with the children the fat that is used in their homes in order to know what is available.

The recipes should be written on the blackboard before the lesson hour.

RECIPES.

Cowpeas.

Cowpeas should be cooked soon after gathering, in order to preserve their fine flavor. Cook the green cowpeas (in pod or shelled) in boiling salted water until tender. Season and serve. Dried cowpeas should be soaked over night (seven or eight hours), then boiled till tender. After absorbing water the dried cowpeas will have increased in size until each cup makes nearly two and one-half cups of cooked peas.

Okra.

The young pods of okra should be boiled in salted water until tender (about 20 minutes), drained, and seasoned with butter, salt, and pepper. Cream can be added if desired.

Collards.

After washing collards thoroughly, add to a large amount of rapidly boiling water, and boil for 15 or 20 minutes or until perfectly tender. Season with salt, pepper, and butter or serve with white sauce.

Stewed Onions.

1 quart onions.

2 tablespoons butter.

$\frac{1}{2}$ cup milk.

$\frac{1}{2}$ teaspoon salt.

White pepper.

Peel onions under cold water. Cook until tender in boiling water (45 to 60 minutes), changing the water at the end of 5 minutes and again in 10 minutes. Do not cover the kettle while the onions are boiling. Drain, and serve with one cup white sauce, or add milk, butter, and pepper, cook 15 minutes, and just before serving add salt. Serves six.

Cabbage.

Cut cabbage into quarters and soak one-half hour in cold salt water to draw out insects. Chop and cook till tender in a large amount of boiling water 20 minutes. Add salt. Leave kettle uncovered. Drain and serve with butter, salt, and pepper or with a sauce. Longer cooking renders the cabbage dark in color and difficult of digestion.

Carrots.

Scrape the carrots and cut them into large dice or slices. Add to boiling salted water and boil until tender (from 30 to 45 minutes). Drain and season with butter, salt, and pepper, or serve with white sauce.

String Beans.

String the beans if necessary and cut them into 2-inch lengths. Add to boiling water. Boil rapidly with the cover partially off of the saucepan for from one to three hours, but be careful not to overcook. Turn into a colander and let cold water run upon them. Reheat with seasonings of salt, pepper, and butter or white sauce.

Salt pork may be boiled with the beans to give them added flavor.

See Farmers' Bulletin No. 256, "The preparation of vegetables for the table."

Experiments to show nature of starch.

1. Mix $\frac{1}{2}$ cup cold water quickly with 1 tablespoon flour. Let stand.
2. Mix $\frac{1}{2}$ cup cold water very slowly with 1 tablespoon flour. Let stand. Compare with No. 1.
3. Mix $\frac{1}{2}$ cup cold water very slowly with 1 tablespoon sugar. Let stand. Compare with No. 2.
4. Mix $\frac{1}{2}$ cup cold water very slowly with 1 tablespoon flour, heat, stirring constantly. Observe result.
5. Heat $\frac{1}{2}$ cup water; when boiling add 1 tablespoon flour all at once. Stir.
6. Heat $\frac{1}{2}$ cup water; when boiling add 1 tablespoon flour which has been rubbed smooth by slowly adding 2 tablespoons cold water to it. Compare with No. 4.
7. Heat $\frac{1}{2}$ cup water; when boiling add 1 tablespoon flour which has been rubbed smooth with 1 tablespoon creamed butter.
8. Heat 1 tablespoon butter, add 1 tablespoon flour, then add slowly $\frac{1}{2}$ cup boiling water, stirring constantly.
9. Heat $\frac{1}{2}$ cup water; when boiling add slowly to 1 tablespoon flour which has been thoroughly mixed with $\frac{1}{2}$ cup sugar. Stir till thickened.
10. Heat 1 tablespoon dry flour in frying pan. Taste. Slowly add $\frac{1}{2}$ cup cold water, then heat, stirring to keep smooth. Taste. Compare with No. 4.

White Sauce.

- | | |
|------------------------------------|--------------------------------|
| 2 tablespoons butter or other fat. | 1 teaspoon salt. |
| 2 tablespoons flour. | $\frac{1}{2}$ teaspoon pepper. |
| 1 cup milk (heated). | |

Sufficient for 1 pint vegetables.

First method.—Heat the butter. When it bubbles add flour and seasoning, mix well, add hot milk gradually, stir constantly, and allow the mixture to thicken and bubble each time before adding another portion of milk.

After the milk has been added, cook 10 minutes, stirring frequently. Serve hot over hot vegetables.

Second method.—Scald the milk, cream the cold butter by stirring with a spoon until soft. Add the flour to the softened butter and stir until smooth; then add hot milk; cook over water for $\frac{1}{2}$ hour, stirring occasionally; add seasoning and serve.

Third method.—Scald one-half the milk; add remaining cold milk slowly to flour; stir this mixture into hot milk and cook $\frac{1}{2}$ hour over water, stirring occasionally; then add seasoning and butter and stir until butter is melted. Serve.

METHOD OF WORK.

Review facts on boiling vegetables learned in previous lesson. Have pupils put water on to boil and prepare vegetable for cooking. If experiments are to be made, they can be performed while vegetables are cooking. If they have been prepared previously, they can be reviewed in discussion at this time. Prepare white sauce by demonstration, using the method which seems most practical. Have vegetables drained, dried, and added to white sauce. When well-heated, serve.

Questions.

What facts regarding the boiling of vegetables did we learn in the last lesson?

Does the vegetable that we are to cook to-day differ in any marked way from those we cooked before? Can we follow the same rule in cooking it?

Can we add the flour directly to the cold milk? To hot milk?

How shall we combine the white sauce?

With what other vegetables can white sauce be used?

Home assignment.—Each pupil should prepare some vegetable and serve it with white sauce before the next lesson.

LESSON VI. CEREALS.

Kinds, Composition, Care, and General Rules for Cooking Cereals. Oatmeal, Cracked Wheat, Hominy Grits, Corn-meal Mush, Rice. Fruits to Serve with Cereals—Stewed Prunes, Stewed Apples, or Apple Sauce.

SUBJECT MATTER.

The term "cereals" is applied to the cultivated grasses—rice, wheat, corn, rye, oats, and buckwheat. They are widely grown throughout the temperate zone and are prepared in varied forms for use as food. Cereals contain a high per cent of starch and a low per cent of water, with varying proportions of mineral matter and fat. In addition to these four foodstuffs already studied, cereals contain a small amount of another foodstuff known as protein, a muscle-building material. For the most part the cereals contain a large amount of cellulose, which is broken up during the process of preparation for market and requires long cooking before ready for use by the body. The digestibility of the cereals depends upon the amount of cellulose which they contain and the thoroughness of cooking. Cereals are palatable and they are valuable because they can be blended in various ways with other substances in cooking. They are beneficial to the body because they act mechanically on the digestive organs to stimulate them. The cereal is made more attractive by serving a fresh or cooked fruit as an accompaniment.

PRELIMINARY PLAN.

The cereals should be discussed in a nature study or geography lesson, and two or three kinds that are commonly used should be brought from the homes by the girls. If cereals are not commonly used as breakfast foods, the lesson can be a means of introducing them. Some girls should bring a little milk and sugar to serve with the cooked cereal. Apples or prunes should be brought to cook and serve with the cereal.

RECIPES.

Oatmeal.

3 cups boiling water.
1 teaspoon salt.

1 cup oatmeal.

Add oatmeal slowly to boiling salted water.

Boil 10 minutes, stirring constantly, then cook slowly, preferably over water, at least one and one-half hours longer; the flavor is developed by longer cooking. Serves six.

Cracked Wheat.

Follow recipe for oatmeal, using 1 cup cracked wheat.

Hominy Grits.

Follow recipe for oatmeal, using 1 cup hominy grits.

Corn-meal Mush.

4 cups boiling water.
1 teaspoon salt.

1 cup corn meal.

Add corn meal slowly to boiling salted water.

Boil 10 minutes, stirring constantly, then cook slowly three hours longer, preferably over water. Serves 6 to 8.

Boiled Rice.

3 quarts boiling water.
2 teaspoons salt.

1 cup rice.

Pick rice over carefully and wash thoroughly. Add it so gradually to the boiling salted water that the water will not stop boiling. Partly cover and cook 20 minutes, or until the grains are soft; turn into a colander and pour cold water through it, drain, dry, and reheat in hot oven with door open. Serve hot as a vegetable or as a simple dessert with cream and sugar. Serves 6 to 8.

Stewed Prunes.

$\frac{1}{2}$ pound prunes.

1 quart cold water.

Wash the prunes in two or three waters, then soak them in cold water for several hours. Heat them in the water in which they are soaked, and cook slowly until tender, an hour or more. Serves 6 to 8.

Stewed Apples.

10 apples.
 $\frac{3}{4}$ cup water.

$\frac{1}{4}$ cup sugar.

Cook sugar and water together until it boils.

Wash, pare, and cut apples into quarters; core, and slice quarters lengthwise into $\frac{1}{4}$ -inch slices; put apple slices into boiling sirup and cook slowly until tender. Remove from sirup at once and let sirup boil down to thicken.

Apple Sauce.

10 apples.

 $\frac{1}{2}$ cup sugar. $\frac{1}{2}$ cup water.

Wipe, quarter, core, and pare sour apples; add the water and cook until apples begin to soften; add the sugar and flavoring, cook until apples are very soft, then press through a strainer and beat well. Serves 8 to 10.

See Farmers' Bulletins: No. 249, Cereal Breakfast Foods; No. 565, Corn Meal as a Food and Ways of Using It. United States Department of Agriculture, Bulletin 123. Professional Paper, Extension course in Vegetable Foods. Supt. of Documents, Government Printing Office, Washington, D. C.

METHOD OF WORK.

As soon as the class meets discuss the recipes briefly and put the cereals on to cook at once. Prepare the fruit. While the long cooking of the cereal is in progress discuss the composition, food value, and methods of using cereals. Then go on with another lesson and call the class together for serving later in the day. Serve the fruit and cereals together.

LESSON VII. CLASSIFICATION OF FOODS (Reviewed).**SUBJECT MATTER.**

Those foods which build up and repair the tissues of the body are called protein foods, muscle builders, or flesh formers. Meat, fish, poultry, eggs, cheese, milk, cereals, legumes, and nuts are classed as protein foods.

Those foods which serve solely as fuel for the body—providing heat and energy—are classed under two groups: The carbohydrates (sugar and starches), which the body is able to use in relatively large quantities; and the fats and oils, which the body can not use in such large quantities, but which yield a large amount of heat and energy. Protein also serves as fuel, though tissue building is regarded as its special function. Sugars and starches are abundant in fruits and vegetables. Fats and oils are found in meats, fish, milk, and in some vegetable foods. Heat-giving food may be stored in the body as fatty tissue.

Mineral compounds must be present in our food to help in the regulation of the body processes and to enter into the composition of the structure and the fluids of the body. Mineral compounds are best supplied by the fresh green vegetables, fruits, and milk.

Water is absolutely essential to the body and is present in large quantity in many foods, and is combined with many other foods during the processes of cooking.

One or more of the foodstuffs sometimes predominate in a single food. For example, rice is almost entirely carbohydrate; butter

almost pure fat. Occasionally we find a food that contains all the five groups of food principles. Milk is an example of such a food and milk contains all five food principles in such proportion as to supply all the nourishment which the baby needs during the early months of its life. As the baby grows older, foods rich in carbohydrates must be added to the diet in order to supply a sufficient amount of energy for activity. Wheat contains all that the body needs for nourishment except for the absence of water. This lack is usually remedied by the addition of water when cooking.

Protein foods.

Meats.
Fish.
Poultry.
Eggs.
Cheese.
Milk.
Cereals.
 Wheat.
 Oatmeal.
 Rye.
Legumes.
 Peas.
 Beans.
 Lentils.
 Peanuts.
Nuts.

Fat foods.

Cream.
Butter.
Lard.
Fat meats.
Fish.
Salad oil.
Nuts.
Chocolate.

Carbohydrate foods.

Sugar.
Honey.
Syrup.
Winter vegetables.
 Potatoes.
 Parsnips, etc.
Cereal preparations.
 Meals.
 Flours, etc.
Fruits.
Prepared foods.
 Bread.
 Crackers.
 Macaroni.
 Jellies.
 Dried fruits.
 Candy.

Foods rich in mineral matter.

Fruits.
Vegetables.
 Spinach.
 Tomatoes.
 Onions.
 Turnip tops.
 Cauliflower.
Cereals.
 Grits and other coarse preparations.

Choice of food.—Our diet must be carefully chosen to give a needed variety and to properly combine the foods so that we may have the right amount of all the foodstuffs. Each meal should contain some protein food, some fats or carbohydrates, some mineral matter, and water. All five forms of foodstuffs must occur in the day's diet. The greater part of the water which the body needs should be taken between meals.

See Farmers' Bulletins: No. 142, Principles of nutrition and nutritive value of food; No. 712, School lunches; No. 808, How to select foods. No. I, What the body needs.

METHOD OF WORK.

Review the foods discussed in the previous lessons and sum up the classification of foods, being sure that the pupils can name common examples of each. Discuss simple combinations for the different meals, using dishes already prepared in the course and creating an interest in other recipes to be prepared in the succeeding lessons.

LESSON VIII. THE PLANNING AND SERVING OF MEALS.

SUBJECT MATTER.

Experience has shown that some foods are more acceptable at one time of day than other foods, and that foods are more pleasing in certain combinations than in others. The choice of food will also depend upon the season of the year. For example, a breakfast is made up of simple foods that are not highly seasoned nor subjected to elaborate methods of cooking. A fruit, a cereal, and bread, with possibly eggs or meat, are served at breakfast. A beverage, usually hot, is added to breakfast by most people.

Fundamentally, dinner consists of a hot meat or other protein dish with one or two vegetables. Soup, salad, and a sweet dessert are often served with the dinner. The soup is served before the meat course and the salad and dessert follow the meat course. The dessert may be a fruit, a cooky, or other pastry, a pudding or a frozen dish.

Lunch or supper may be a very simple meal, consisting of a soup with crackers, one protein dish (eggs, milk, or meat) with bread and stewed fruit, or a salad with a simple dessert.

EXAMPLES OF WELL-CHOSEN MENUS.

Breakfast.

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|----------------------------------|--------------------|
| No. I. Apple sauce. | Hominy or oatmeal. |
| Sausage or bacon. | Milk toast. |
| No. II. Baked apples. | Cracked wheat. |
| Eggs in the shell. | Corn muffins. |
| No. III. Stewed figs or berries. | Cornmeal mush. |
| Poached eggs. ¹ | Toast. |

Dinner.

- | | | |
|----------------------------------|------------------------------|-----------------|
| No. I. Pork chops. | Fried apples. | Mashed turnips. |
| Baked sweet potatoes. | Bread. | |
| | Rice pudding. | |
| No. II. Beef or mutton stew. | Spinach or turnip tops. | |
| Biscuits. | Cornstarch pudding. | |
| No. III. Baked beans or cowpeas. | Creamed cabbage or collards. | |
| Fried sweet potatoes. | Corn dodgers. | |
| Grape sauce. | | |

Supper.

- | | | |
|---------------------------------|---------------------------|-------------|
| No. I. Egg corn pone. | Buttermilk or sweet milk. | |
| Stewed apricots or other fruit. | Peanut cookies. | |
| No. II. Omelet. | Creamed potatoes. | Corn bread. |
| | Fresh fruit. | |
| No. III. Cream of carrot soup. | Cottage cheese. | |
| Biscuits. | Sirup. | |

See Farmers' Bulletins: No. 717, Food for young children; No. 808, How to select foods; No. I, What the body needs.

¹ Eggs should be omitted from the breakfast menu if they are not easily obtainable.

The table should always be neatly set with individual places arranged for each one who is to partake of the meal. Each place should be wide enough for a plate with a knife and spoon at the right and a fork at the left. A tumbler should be placed at the point of the knife and a napkin at the left of the fork. Everything placed on the table should be perfectly clean, the napkin should be neatly folded, and all the articles should be uniformly arranged to give a neat appearance to the table. A flower or plant in the center of the table will add to its attractiveness. Salt, pepper, sugar, vinegar, and anything of the sort that may be needed with the meal should be arranged near the center of the table where it can be easily reached. Fresh water should be poured into the tumblers just before the meal is served. The bread, butter, etc., can be placed on the table several minutes before the meal is announced, but the hot dishes should be placed immediately before the family is seated.

PRELIMINARY PLAN.

If Lesson VI, entitled "Setting and Clearing the Table" (as outlined in the course on the care of the home), has been given, this lesson can be devoted to what to serve and how to serve it, or this lesson can precede the lesson on table service. The manner of serving can be demonstrated in the next lesson in connection with the course in the care of the home.

Simple equipment for family service will be required if the form of serving is to be taken up. For class practice a table for four can be arranged. This will necessitate a table cover, five or more dinner plates, four butter dishes or plates, four tumblers, four cups and saucers, four knives, four forks, four teaspoons, four napkins, a platter, one serving spoon, and one serving fork.

METHOD OF WORK.

Discuss meal service both from the standpoint of choice and combination of foods and from the method of service. Have the class plan one meal, then go through the form of serving that meal at a table. In the absence of a table the top of the desks can be used for a table. Later in the course the teacher should plan to combine this lesson with a cooking lesson and have the food served. In each cooking lesson suggestions for the service of the food should be made and each cooked dish should be carefully served. Interest in this lesson may be increased by allowing the children to make original menus, and if they are having some lessons in drawing, simple menu cards may be planned and executed.

LESSON IX. MILK.

Care, Cost, and Food Value of Milk. Value and Use of Sour Milk—Cottage Cheese, Clabber. Rice or Cornstarch Pudding (Plain, Caramel, or Chocolate).

SUBJECT MATTER.

Milk contains all the foodstuffs which the body requires, and therefore is capable of sustaining life for comparatively long periods. It is one of the most important protein foods, but it contains so small a per cent of carbohydrate (milk sugar) that for the adult it must be supplemented with carbohydrate foods. For the baby, milk is a perfect food, and it is a valuable adjunct to the diet of all children. One quart of milk should be allowed for the diet of each child daily after the twelfth month. The diet of the adult can well be supplemented by the use of milk. The greatest care should be exercised to protect milk from dust and dirt, for it is easily contaminated and may be the means of carrying disease germs to the body. The changes which milk undergoes when souring do not render it harmful to the body. For many people buttermilk is more easy of digestion than sweet milk, because of the changes produced by souring and the absence of fat. Sour milk is of value in cooking, producing a tender bread which can readily be made light by the addition of soda—one teaspoon of soda to 1 pint of sour milk that has clabbered.

In the preparation of cheese, the whey is separated from the curds, thus extracting most of the water, sugar, and salts, and leaving a substance rich in protein and fat. Cheese is of value in cooking, for it increases the food value of those foods to which it is added.

PRELIMINARY PLAN.

The teacher should make inquiries a few days in advance to be sure that 1 quart of sour milk can be secured, and when it is brought, she should examine it to see that it is in proper condition to make cottage cheese. She should arrange to have about 1 quart of sweet milk brought and such other supplies as are necessary for the pudding.

Opportunity can be found to discuss the use of left-over cereal by the preparation of the rice pudding, if the teacher provides some cold cooked rice for the lesson. In the absence of cold rice, the cornstarch pudding can be prepared.

RECIPES.

Cottage Cheese.

Heat sour milk slowly until the whey rises to the top, pour the whey off, put the curd in a bag and let it drip for six hours without squeezing. Put the curd into a bowl and break fine with a wooden spoon; season with salt, and mix into a paste with a little cream or butter. Mold into balls, if desired, and keep in a cold place. (It is best when fresh.)

See Farmer's Bulletin No. 363, The Use of Milk as Food; No. 487, Cheese and its Economical Uses in the Diet.

Rice Pudding.

$\frac{1}{2}$ cup boiled rice.
2 cups milk.
2 eggs.

$\frac{1}{2}$ cup sugar.
 $\frac{1}{2}$ teaspoon salt.
 $\frac{1}{2}$ teaspoon vanilla.

Scald the milk and add the rice, heat until rice is soft; add well-beaten yolks of eggs, sugar, and salt; cook three minutes, over water; remove from fire; add the well-beaten whites and flavoring, and serve cold. Serves 8.

Cornstarch Pudding.

$\frac{1}{2}$ cup sugar.
5 tablespoons cornstarch, or $\frac{1}{2}$ cup
flour.
1 teaspoon vanilla, or other flavoring.

3 cups milk.
1 egg.

Combine sugar and cornstarch thoroughly. Add one cup cold milk and stir until smooth. Heat remainder of the milk, add cornstarch mixture slowly and stir until it begins to thicken. Continue cooking over hot water 20 minutes. Beat egg well, add hot pudding slowly, strain, and cool. Serve with milk or cream and sugar. (Egg may be omitted, if desired.) Serves 8.

For chocolate cornstarch pudding, use $\frac{1}{2}$ cup sugar additional and two squares Baker's chocolate. Melt chocolate carefully, add sugar, and add to cornstarch mixture.

For caramel cornstarch pudding, use two cups brown sugar and one cup boiling water. Heat sugar until it becomes a light-brown liquid; add boiling water and stir until sugar is all dissolved. Let cool; then add to cornstarch mixture.

METHOD OF WORK.

As soon as class meets demonstrate the method of making cottage cheese. Show separation of curd and whey by adding vinegar or lemon juice to sweet milk. While cheese is draining, make assignments and have the rice or cornstarch pudding made.

Emphasize the use of protein foods in this lesson and in those following.

Discuss food value of milk and its use in cooking. Discuss the food value and purposes for which skimmed milk and sour milk can be used in cooking.

Use the cottage cheese and the pudding for the school lunch.

LESSON X. SOUPS.

Cream Soups. Cream of carrot, potato, or onion soup, green pea soup or cowpea soup. Toast, croutons, or crisp crackers to serve with soup.

SUBJECT MATTER.

Cream soups.—The strained pulp of cooked vegetables, greens, or cereals, with an equal portion of thin white sauce, is the basis for cream soups.

A binding of butter and flour is used to prevent a separation of the thicker and the thinner parts of soup. This is combined as for white sauce and poured into the rest of the hot liquid just before the soup is to be served. The soup should not be allowed to boil after the vegetable pulp and milk have been combined, but kept hot over hot

water. The acid present in nearly all vegetables is very apt to produce a curdling in the milk if too high a temperature is maintained after they are combined.

Two tablespoons of flour to each quart of soup is a good proportion to observe for thickening all vegetable soups that are not of a starchy nature; half that amount will be sufficient for soup prepared from a very starchy vegetable.

Attractive cream soups can be prepared from left-over vegetables and a combination of flavors may give good results.

Accompaniments.—Crisp crackers, croutons, soup sticks, or bread sticks are served as accompaniments with cream soups and are valuable because they necessitate thorough mastication, thus inducing the flow of the saliva and aiding in the digestion of the starchy ingredients of the soup.

PRELIMINARY PLAN.

The teacher should secure a vegetable that the girls have for use in their own homes as a basis for the soup, and crackers or bread to serve with the soup.

If dried peas are used, they should be put to soak the night before and put on to cook early in the morning.

It will be well to have the cooking of the carrots begun before the lesson period. If the carrots are cut up in small pieces, they will cook more quickly.

RECIPES.

Cream of Carrot Soup.

1 pint carrots, sliced.	1½ quarts hot milk.
2 tablespoons butter.	2 teaspoons salt.
4 tablespoons flour.	½ teaspoon pepper.

Cook carrots until very tender in enough boiling water to cover, then rub all through a strainer with a wooden spoon.

Heat butter, add flour and then the carrot mixture, and when it boils well, add hot milk and seasonings. Serve at once. Serves 6.

Cream of Potato Soup.

1 pint milk or milk and water.	1 tablespoon flour.
2 teaspoons chopped onions.	1 teaspoon salt.
3 potatoes.	½ teaspoon pepper.
1 tablespoon butter.	2 teaspoons chopped parsley.

Heat the milk over hot water. Add the chopped onions. Boil the potatoes until soft; drain, mash, and add the hot milk. Strain. Melt the butter, add the flour and seasonings and the potato mixture slowly. Cook 5 minutes; add the chopped parsley and serve at once. Serves 4.

Cream of Onion Soup.

3 large onions.	2 teaspoons salt.
3 tablespoons butter.	½ teaspoon pepper.
½ cup flour.	1 quart milk or water.

Chop or slice onions, add the hot butter, and fry to a red brown. Add flour and seasonings and cook until slightly brown. Add hot liquid and cook to a creamy consistency. Strain, reheat, and serve. Serves 8.

Green Pea Soup.

1 pint or 1 can peas.	2 tablespoons flour.
1 quart water.	$\frac{1}{2}$ teaspoon salt.
1 pint milk or cream.	$\frac{1}{8}$ teaspoon white pepper.
2 tablespoons butter.	$\frac{1}{2}$ teaspoon sugar.

Wash the peas and cook until soft in one quart of boiling water. Mash them in the water in which they were cooked, strain, and add the milk or cream; melt butter, add flour and seasoning, then the liquid, and cook until of creamy consistency. If the peas are fresh, some of the pods may be cooked with them. Serves 8.

Pea Soup.

1 cup split peas or cowpeas.	3 tablespoons flour.
2 $\frac{1}{2}$ quarts water.	1 $\frac{1}{2}$ teaspoons salt.
2 tablespoons chopped onion.	$\frac{1}{2}$ teaspoon pepper.
3 tablespoons butter.	1 pint milk.

Wash the peas and soak them over night in cold water; drain and rinse thoroughly; add 2 $\frac{1}{2}$ quarts of cold water and the onion; cook slowly until soft; rub through a strainer and add the remainder of the liquid; melt butter, add flour and seasonings, then hot milk with the liquid from the peas, and cook until it is like thick cream. Cooking a ham bone with the soup improves the flavor. Serves 6 to 8.

Toast.

Cut stale bread into slices one-fourth inch thick; put on the toaster or fork, move gently over the heat until dry, then brown by placing nearer the heat, turning constantly. Bread may be dried in oven before toasting. Hot milk may be poured over dry toast.

Croutons.

Cut stale bread into one-half-inch cubes and brown in the oven.

Crisp Crackers.

Put crackers in oven for a few minutes or split and butter thick crackers and brown in a hot oven; serve with soup.

METHOD OF WORK.

Devote a few minutes to a discussion of cream soups and a review of the cooking of vegetables and white sauce.

Divide the work among the members of the class, assigning enough to each girl to keep her busy and arranging the work so that the soup and its accompaniments will be ready for serving at the same time.

LESSON XI. EGGS.

Food value and general rules for cooking eggs. Cooked in shell, poached, scrambled, and omelet.

SUBJECT MATTER.

Eggs are a very valuable food because of the large amount of protein and fat they contain. Though lacking in carbohydrates, they furnish material for building up the muscles and provide heat and energy to the body. If cooked at a low temperature, eggs are very

easily and very completely digested. Combined with other foods they serve as thickening (for sauces and soups) and as a means of making batters light (popovers and sponge cake). They add flavor and color and increase the nutritive value of other foods.

See Farmers' Bulletin No. 128, Eggs and their Uses as Food.

PRELIMINARY PLAN.

The lesson on eggs furnishes one of the best opportunities to teach the muscle-building foods. If eggs are scarce, it may be well to give this lesson at some other time in the course. Each pupil should be asked to bring an egg; one or two should bring a little milk; and enough bread should be provided to toast for the poached eggs. The teacher should not undertake to give too many recipes in this lesson, but should try to acquaint the girls with a sufficient variety of ways of cooking eggs to make egg cookery interesting. A moderate temperature for cooking eggs should be emphasized.

RECIPES.

Soft-Cooked Eggs.

Put the eggs in boiling water sufficient to cover, remove from the fire, cover, and allow them to stand from 5 to 8 minutes.

Hard Cooked Eggs.

Put the eggs in cold water, heat, and when the water boils, reduce heat and let them stand 20 minutes with water just below the boiling point, then put into cold water.

Poached Eggs.

Break each egg into a saucer carefully, slip the egg into boiling water, decrease heat, and cook 5 minutes or until the white is firm, and a film has formed over the yolk. Take up with a skimmer, drain, trim off rough edges, and serve on slices of toast. Season.

Poached eggs are attractive covered with white sauce to which chopped parsley has been added.

Baked eggs.

Line a buttered baking dish with buttered bread crumbs, break eggs in dish without separating, add one tablespoon milk or cream for each egg. Season with salt and pepper, and sprinkle with grated cheese, if desired; or the dish may be lined with cold mashed potatoes. Bake in a moderate oven until eggs are set.

Creamed Eggs.

3 hard cooked eggs.

6 slices toast.

1 cup medium white sauce.

Prepare white sauce and add hard cooked eggs cut in halves, sliced, or chopped, and when hot serve on toast.

Or separate whites and yolks, chop whites fine, add to white sauce, and when hot serve on toast and garnish with yolks run through sieve or ricer. Season with salt and pepper. Serves 4 to 6.

Creamy Omelet.

1 egg.

 $\frac{1}{2}$ teaspoon salt.

1 tablespoon milk.

Pepper.

 $\frac{1}{2}$ teaspoon butter.

Beat egg slightly, add milk and seasonings; put butter in hot omelet pan, when melted turn in the mixture; as it cooks draw the edges toward the center until the whole is of a creamy consistency; brown quickly underneath; fold and turn onto a hot platter. Serve at once. Serves 1.

Scrambled Eggs.

Double the quantity of milk given for creamy omelet and stir all the time while cooking

Foamy Omelet.¹

1 egg.

 $\frac{1}{2}$ teaspoon salt.

Cayenne or white pepper.

1 tablespoon milk or water.

 $\frac{1}{2}$ teaspoon butter.

Beat the yolk of the egg until creamy, add seasoning and milk; beat the white until stiff, but not dry, cut and fold into the yolk carefully; heat an omelet pan, rub bottom and sides with the butter, turn in the omelet, spread it evenly on the pan. Cook gently over heat until omelet is set and evenly browned underneath; put it into a hot oven for a few minutes to dry slightly on top; fold and serve immediately. Serves 1.

METHOD OF WORK.

Devote one-half the class period to a discussion of the structure of the egg and the effect of heat upon it. Use simple experiments or watch the poached egg to make a study of the changes produced in the egg by heat. If girls are sufficiently experienced, have them work together in small groups, first scrambling an egg, then making an omelet. Demonstrate the cooking of the omelet before the entire class. Serve the egg dishes carefully while hot.

LESSON XII. SIMPLE DESSERTS—CUSTARDS.

SUBJECT MATTER.

A custard is a combination of eggs and milk, usually sweetened and flavored and either steamed or baked as cup custard, or cooked in a double boiler as soft custard. The whole egg may be used or the yolks alone. The yolks make a smoother, richer custard.

The egg must be thoroughly mixed, but not beaten light, the sugar and salt added and the milk scalded and stirred in slowly. The custard must be strained through a fine sieve and cooked at a moderate temperature. It is desirable to strain a custard in order to remove the bits of membrane present from about the yolk. The cup custard should be strained before cooking, the soft custard may be strained after cooking.

¹ The omelet recipes given are for individual portions. To make a large omelet, multiply quantity of each ingredient by number of eggs used. The best results will be obtained by making an omelet of not more than four eggs, as larger omelets are difficult to cook thoroughly and to handle well. A two-egg omelet will serve three people. A four-egg omelet will serve six people.

A soft custard is cooked over water and is stirred constantly until done. When done, the froth disappears from the surface, the custard is thickened and coats the spoon and sides of the pan, and there is no sign of curdling. If the custard is cooked too long, it becomes curdled. If a custard becomes curdled, put it into a pan of cold water and beat until smooth.

A steamed or baked custard is done when it becomes set and when a silver knife will come out clean after cutting it.

PRELIMINARY PLAN.

This lesson will furnish opportunity for review of milk and eggs. The pupils can plan to bring the necessary materials from their homes.

RECIPES.

Steamed Custards.

- | | |
|--------------------------|--------------------------------|
| 1 quart milk (heated). | $\frac{1}{2}$ teaspoon salt. |
| 4 eggs or 10 egg yolks. | 2 tablespoons caramel or |
| $\frac{1}{2}$ cup sugar. | $\frac{1}{2}$ teaspoon nutmeg. |

Beat eggs sufficiently to mix them thoroughly; add sugar, salt, and hot milk slowly. Strain into cups, flavor with caramel, or sprinkle nutmeg on top, and steam until firm over gently boiling water, 20 to 30 minutes.

Baked Custards.

Prepare as steamed custards, set in pan of hot water, and bake in slow oven until firm; 20 to 40 minutes.

Chocolate Custards.

Use recipe for steamed custards, adding 1 ounce chocolate (melted) to the hot milk. Steam or bake as desired.

Soft Custard.

- | | |
|-----------------------|---|
| 1 pint milk (heated). | $\frac{1}{4}$ teaspoon salt. |
| 4 egg yolks. | $\frac{1}{2}$ teaspoon vanilla extract. |
| 4 tablespoons sugar. | |

Beat egg yolks sufficiently to mix them thoroughly, add sugar, salt, and hot milk slowly. Cook over water that is boiling gently. Stir constantly until the custard thickens. Strain. Flavor when cool.

For soft chocolate custard add $\frac{1}{2}$ ounce chocolate (melted) to the hot milk. Serves 6.

Floating Island.

Use recipe for soft custard and when cold garnish with a meringue made according to the following recipe:

Meringue.

- | | |
|---------------|-----------------------------------|
| 4 egg whites. | $\frac{1}{2}$ cup powdered sugar. |
|---------------|-----------------------------------|

Beat egg whites very light, add powdered sugar and continue beating. Drop in large spoonfuls on cold custard. Serves 8 to 10.

METHOD OF WORK.

It may be possible to teach two or three recipes in this lesson. The cup custard can be put into the oven while the soft custard or floating island is being made. Serve at the school lunch.

LESSON XIII. BATTERS.

Corn Bread and Hoecake.

SUBJECT MATTER.

Batters.—Batters are mixtures of flour or meal and a liquid, with salt or sugar to give flavor, butter to make tender, and air or gas to make light.

One scant measure of liquid is used with one measure of flour for thin or pour batter. One measure of liquid is used with two measures of flour for a thick cake or drop batter. One measure of liquid is used with three measures of flour for a soft or bread dough. One measure of liquid is used with four measures of flour for a stiff or pastry dough.

Before mixing a batter the oven or griddle should be at the proper temperature, with the fire well regulated and in good condition. The oven should be tested by putting in a piece of white paper or two tablespoons flour which should brown in three minutes. The pans should be prepared by greasing with lard, salt pork, or beef dripping. All materials should be measured and ready before beginning to combine ingredients. When the batter has been combined and beaten until smooth, it should be baked at once.

PRELIMINARY PLAN.

The teacher will be better prepared to give the lessons on batters if she first acquaints herself with the kinds of breads that are used in the homes and the methods followed in their preparation. The simple general methods of preparing batters should be taught. The teacher should not attempt the preparation of more than one or two batters in the lesson. Corn bread and hoecake can be made in the same lesson, since the first is made in the oven and the second cooked on a griddle on top of the stove.

RECIPES.

Corn Bread.

1 cup scalded milk.	1 teaspoon salt.
$\frac{1}{2}$ cup white corn meal.	

Add salt to corn meal and pour the milk on gradually. Turn into a well-greased shallow pan to the depth of one-fourth inch. Bake in a moderate oven until crisp.

Hoecake.

1 cup white corn meal.	$\frac{1}{2}$ teaspoonful salt.
Boiling milk or water enough to scald.	

Make the batter thick enough not to spread when put on the griddle. Grease the griddle with salt pork, drop the mixture on with a large spoon. Pat the cakes out till about half an inch thick; cook them slowly, and when browned put a bit of butter on the top of each cake and turn it over. Long cooking is desirable, but be careful that they do not burn.

METHOD OF WORK.

Discuss batters briefly. Have all measurements made, fire regulated, pans prepared, etc. Demonstrate combining of corn bread, put it in the oven, and while it is cooking demonstrate combining and cooking of hoeecake. Serve the breads nicely after they are cooked.

LESSON XIV. BATTERS (continued).

Egg Corn Pone or Corn Muffins—Baking Powder Biscuits.

SUBJECT MATTER.

Methods of making batters light.—Batters are made light by beating air into them, by adding eggs into which air has been beaten, or by entangling gas in the batter. Gas is secured by using soda and sour milk in a batter (1 teaspoon of soda to 1 pint of sour milk), or soda with molasses (1 teaspoon of soda to 1 cup of molasses), or soda with cream of tartar (1 teaspoon of soda with 2 slightly rounding teaspoons of cream of tartar). The soda should be combined well with the other dry ingredients, then the sour milk or molasses added, the whole beaten up quickly and baked at once.

Baking powder is a preparation containing soda and cream of tartar, and can be used in place of soda if sweet milk is used. Two level teaspoons of baking powder should be used with one cup of flour.

PRELIMINARY PLAN.

This lesson is a continuation of the lesson on batters. Care should be taken not to undertake more than can be done nicely in time available.

RECIPES.

Egg Corn Pone.

1 cup white corn meal.	1 egg.
1 teaspoon salt.	1 pint sour milk.
1 teaspoon soda.	1 tablespoon melted butter, lard, or other fat.

If sweet milk is used, omit the soda and use 2 level teaspoons baking powder. Sift together corn meal, salt, and soda, add the egg well beaten, then the milk and melted butter. Beat thoroughly, put into a shallow, well greased dish, preferably earthen, granite, or iron, and bake 30 to 35 minutes in a hot oven.

Corn Muffins.

1 cup flour.	$\frac{1}{2}$ teaspoon salt.
$\frac{1}{2}$ cup corn meal.	1 cup milk.
3 teaspoons baking powder.	1 egg.
1 tablespoon sugar.	2 tablespoons butter.

Mix and sift dry ingredients. Add egg and milk beaten together. Add melted butter last. Bake in gem pans or muffin tins 25 to 30 minutes. Serves 12 to 16.

Baking-Powder Biscuits.

2 cups flour.	2 tablespoons fat.
4 teaspoons baking powder.	$\frac{1}{2}$ to 1 cup milk or water.
1 teaspoon salt.	

Mix dry ingredients, chop fat into the flour with a knife, slowly add sufficient milk to make a dough not too soft to be handled. Toss and roll dough gently on a slightly floured board, and cut into small biscuits. Moisten tops with a little milk. Handle dough quickly, lightly, and as little as possible. Place on a buttered sheet. Bake in a hot oven till brown, from 12 to 15 minutes. Either white or whole wheat flour may be used for biscuit. Serves 6 to 8. Oven test—oven should be hot enough to color a piece of unglazed white paper to golden brown in one minute.

Soda Biscuits.

1 pint flour.	$\frac{1}{2}$ teaspoon salt.
$\frac{1}{2}$ teaspoon soda (scant).	1 cup sour milk (scant).
2 tablespoons shortening (lard or other fat).	

Proceed as for baking-powder biscuits.

If the sour milk is not thick enough to clabber, it will not contain sufficient acid to neutralize the soda and the biscuits will be yellow and bitter. To avoid this, cream of tartar can be combined with the soda (1 teaspoonful). If there is no cream of tartar at hand, it will be wise to use the recipe for baking-powder biscuits.

METHOD OF WORK.

Have oven and pans prepared and all measurements made. Demonstrate the combining of the corn pone, and while that is baking, demonstrate the combining of the biscuits. Have one girl take charge of the baking of the corn pone and another girl take charge of the baking of the biscuits. When the breads are done, have the girls sit down and serve them to one another, or to all the pupils at the school lunch hour.

LESSON XV. MEAT.

Composition and food value. How to make tough cuts of meat palatable. Pork chops with fried apples. Beef or mutton stew with vegetables and dumplings. Rabbit stew. Bacon.

SUBJECT MATTER.

Meats are rich in protein and usually in fats, but are lacking in the carbohydrates. They build up the muscular tissue, furnish heat and energy, are more stimulating and strengthening than any other food, and satisfy hunger for a greater length of time. For the most part, meats are a very expensive food. One can not perform more labor by use of a meat diet than on a diet of vegetable foods. Those who use large quantities of meat in their diet suffer from many disturbances of the system. Hence, meats should form a very small part of the diet. The cuts of meat that come from those portions of the animal's body that are much exercised are tough, owing to the development of the fibers, but they contain a high per-

centage of nutrition. The flesh of chickens, turkeys, and other fowls is very nutritious and is easily digested, if not too fat. In the older birds it may become very tough.

The flavor of meats is developed by cooking. Dry heat develops the best flavor, hence the tender cuts are cooked by the processes known as broiling and roasting. Tough cuts of meat require long, slow cooking in moist heat, hence they are prepared in the form of stews and pot roasts or used in meat soups.

PRELIMINARY LESSON.

After the teacher has found out what meats are used in the homes or what they can afford to use, she should determine upon a recipe that will help to make the meat palatable, digestible, and attractive. If it can be prepared as a stew, she should use a recipe in which vegetables are also used, and if possible have dumplings prepared to serve with the meat, as a review of the lesson on batters.

RECIPES.

Beef or Mutton Stew.

2 lbs. beef or mutton.	4 potatoes, cut in $\frac{1}{2}$ -inch slices.
1 quart water.	1 teaspoon salt.
Salt, pepper, flour to dredge.	$\frac{1}{2}$ teaspoon pepper.
1 onion, cut in slices.	$\frac{1}{2}$ cup flour.
$\frac{1}{2}$ cup turnip, cut in dice.	$\frac{1}{2}$ cup cold water.
$\frac{1}{2}$ cup carrot, cut in dice.	

Remove fat and cut the meat into 1-inch pieces. Reserve half of the best pieces of meat, put the rest of the meat and the bone into cold water, soak for one hour, then heat until it bubbles. Season half the raw meat and roll it in the flour; melt the fat in a frying pan, remove the scraps, brown the sliced onion, and then the floured meat in the hot fat; add both to the stew and cook for two hours at a low temperature. To this add the vegetables and cook one-half hour, then add the flour and seasonings, which have been mixed with one-half cup cold water, and cook for one-half hour longer until the meat and vegetables are tender. Remove the bone from stew and serve. Serves 6 to 8.

Rabbit.

If beef and mutton are not commonly used and are not readily obtainable, but rabbit can be secured, substitute rabbit for beef in the stew. After the rabbit has been thoroughly cleaned, cut up in eight pieces (four leg and four body pieces), season, and dredge with flour, brown in fat and proceed as with beef stew.

Dumplings.

2 cups flour.	2 tablespoons fat (lard or butter).
4 teaspoons baking powder.	$\frac{1}{2}$ cup milk or water (about).
$\frac{1}{2}$ teaspoon salt.	

Sift dry ingredients together, cut in the butter, and add milk gradually to make a soft dough. Roll out on a floured board, cut with a biscuit cutter, lay on top of meat in stew pan (they should not sink into the liquid), cover kettle closely, keep stew boiling, and cook dumplings 10 minutes without removing lid. (Do not put dumplings in to cook until meat is tender.)

To Cook Bacon.

Place thin slices of bacon (from which the rind has been removed) in a hot frying pan and pour off the fat as fast as it comes out. When the bacon is crisp, drain on paper. Keep hot. Or lay bacon on a rack in a baking pan and bake in a hot oven until crisp.

Pork Chops.

Wipe the chops with a damp cloth, sprinkle with salt and pepper, place in a hot frying pan, and cook slowly until tender and well browned on each side. Pour the fat out of the pan as fast as it is melted.

Fried Apples.

Wash apples and slice to the center, removing the core. Roll in flour if very juicy. After the chops have been removed from the pan, lay the apples in and cook till tender. Serve around the chops.

See Farmers' Bulletins No. 34, Meats: Composition and cooking; No. 391, Economical use of meat in the home.

METHOD OF WORK.

If the meat is to require two or three hours' cooking, arrange to have the lesson divided and given at two periods through the day. A half hour before opening the morning session or a portion of the morning or noon recess may be sufficient to put the meat on to cook and to prepare the vegetables. When the second class period is called, the vegetables should be added to the partially cooked meat and the dumplings made. It would be well to serve the completed dish at the lunch period. There should be as much discussion of the kinds of meat, their food value, and methods of cooking as time permits, but it may be necessary to complete these discussions at some other class periods.

Should it be possible for the teacher to give additional lessons on meat, it may be well to devote one lesson to the preparation and cooking of poultry, directions for which can be easily secured from reliable cookbooks.

LESSON XVI. BAKED PORK AND BEANS, OR BAKED COWPEAS—CORN-DODGERS.

SUBJECT MATTER.

Peas, beans, and lentils which are dried for market contain a high percentage of protein, carbohydrate, and mineral matter. They form an excellent substitute for meat and are much cheaper in price. Their digestion proceeds slowly, involving a large amount of work; so they are not desirable food for the sick, but are satisfactory for those who are well and active. The dried legumes must be soaked overnight in water, when cooked for a long time, to soften the cellulose and develop flavor.

PRELIMINARY PLAN.

It will be necessary to plan this lesson several days in advance if the beans are to be baked. As they will be prepared and put on to bake before the lesson period, the corndodgers can be made to serve with them.

RECIPES.

Corndodgers.

2 cups fine white corn meal.	$\frac{1}{2}$ teaspoon salt.
Boiling water to moisten.	2 or 3 tablespoons milk.
1 teaspoon fat.	2 eggs.
1 teaspoon sugar.	

Pour boiling water over the meal so that it is all wet but not soft; add fat, sugar, salt, and milk; when cold add the eggs, yolks and whites beaten separately. The batter should drop easily from the spoon, but it should not be thin enough to pour nor stiff enough to require scraping out. It should be shaped in oval shapes on a pan that is well greased and hissing hot, and the oven should be as hot as possible. Bake until brown and puffy.

Boston Baked Beans.

1 quart navy beans.	2 tablespoons molasses.
1 tablespoon salt.	1 cup boiling water.
$\frac{1}{2}$ tablespoon mustard.	$\frac{1}{2}$ pound fat salt pork.
3 tablespoons sugar.	Boiling water to cover.

Look over the beans and soak in cold water overnight.

In the morning drain, cover with fresh water, and heat slowly until skins will burst, but do not let beans become broken.

Scald one-half pound fat salt pork. Scrape the pork. Put a slice of pork in bottom of bean pot. Cut the remaining pork across top in strips just through the rind, and bury pork in beans, leaving rind exposed.

Add one cup boiling water to seasonings and pour over the beans. Cover with boiling water. Bake slowly, adding more water as necessary. Bake from six to eight hours, uncover at the last, so that water will evaporate and beans brown on top. Serves 12.

See Farmers' Bulletin No. 256, The preparation of vegetables for the table.

Baked Cowpeas.

Cook 1 quart of large white cowpeas slowly in water until they begin to soften. This will require five or six hours. Put them into a bean pot, add one-half pound of salt pork and one tablespoonful of molasses. Cover with water and bake slowly six or seven hours. It is well to have the pot covered except during the last hour.

See Farmers' Bulletin No. 559, Use of corn, kafir, and cowpeas in the home.

METHOD OF WORK.

Have the beans washed and put to soak the night before the lesson is to be given. Assign to one of the girls the task of putting them on to boil early the next morning. Call the class together for a few moments when the beans are ready to put in to bake. Assign one of the girls to attend to the fire and the oven. Let the beans bake all

day. If the lesson is to be given late in the afternoon, the beans may be ready to serve, or the cooking may be continued the second day and the lesson completed then. It would be well to serve the dish at the lunch period. Have the corndodgers prepared to serve with the baked beans or cowpeas.

LESSON XVII. BUTTER CAKES—PLAIN YELLOW CAKE—COCOA—COFFEE—TEA.

SUBJECT MATTER.

Cakes.—Cakes made with fat resemble other batters, except that the fat, sugar, and eggs are usually larger in amount and the texture of the baked batter is much finer and more tender.

When preparing cake, first get the pans ready, greasing them with the same kind of fat that is to be used in the mixture, or sprinkle with flour, or line with greased paper. Make sure that the oven is at the proper temperature. For a small cake the oven should be hot enough to brown a small piece of unglazed paper or a tablespoon of flour in three minutes. Bake a small cake 20 to 30 minutes. When done, the cake will shrink from the sides of the pan; the crust will spring back when touched with the finger; the loud ticking sound will cease; a needle or straw will come out clean if the cake is pierced, and the crust will be nicely browned. When the cake is removed from the oven, let it stand in the pan about three minutes, then loosen and turn out gently. Do not handle while hot. Keep in a clean, ventilated tin box in a cool, dry place.

Cocoa.—Chocolate and cocoa are prepared from the bean of a tropical tree. This bean is rich in protein, fat, carbohydrate, mineral matter, and a stimulant called theobromine. The seeds are cleaned, milled, and crushed into a paste in the preparation of chocolate. In the preparation of cocoa much of the fat is removed and the cocoa is packed for market in the form of a fine powder. Cocoa is more easy of digestion than chocolate, because it is less rich. Though the amount of cocoa used in a cup of the beverage is not large, when prepared with milk it serves as a nutritious food. It is slightly stimulating as well, because of the theobromine present and because it is served hot.

Coffee and Tea.—Coffee and tea have no food value when prepared as a beverage. They contain stimulating properties that are harmful to the body if taken in large quantities, hence they should be used with discretion. They should never be given to children or to those troubled with indigestion. If carelessly prepared, both coffee and tea may be decidedly harmful to the body. Coffee should not be boiled for more than eight minutes. Tea should never be permitted to boil. Freshly boiling water should be poured on the leaves and left for three minutes. It should then be strained off for serving and kept hot until used.

PRELIMINARY PLAN.

It will be well to plan to give the lesson on some special occasion, as it is well adapted to serve for the refreshments for a mother's club or a little class party.

RECIPES.

Plain Yellow Cake.

$\frac{1}{2}$ cup butter.	2 teaspoons baking powder.
1 cup sugar.	$1\frac{1}{2}$ cups flour.
2 eggs.	1 teaspoon spice or
$\frac{1}{2}$ cup milk.	$1\frac{1}{2}$ teaspoons flavoring.

Cream butter, add sugar gradually, mix well. Add well-beaten yolks of eggs, then flour and baking powder alternately with the milk. Then add flavoring and cut and fold in whites of eggs carefully. Turn into buttered pans and bake at once in a moderately hot oven.

For chocolate cake 2 ounces of melted chocolate may be added after yolks of eggs. Serves 16 to 20.

Gingerbread.

$\frac{1}{2}$ cup butter.	$1\frac{1}{2}$ cups flour.
$\frac{1}{2}$ cup sugar.	1 teaspoon ginger.
1 egg.	$\frac{1}{2}$ teaspoon cinnamon.
$\frac{1}{2}$ cup molasses.	Salt.
$\frac{1}{2}$ teaspoon soda.	$\frac{1}{2}$ cup milk (sour if possible).

Cream the butter, add sugar gradually, then well-beaten egg. Add molasses. Sift all dry ingredients together, and add alternately with milk. Bake in a buttered tin or in gem pans in a moderate oven 25 or 35 minutes. Serves 8 to 10.

Cocoa.

$\frac{1}{2}$ cup cocoa.	1 cup water.
$\frac{1}{2}$ cup sugar.	3 cups milk.

Mix the cocoa and sugar with the water and boil 10 minutes. Stir into the hot milk and then cook in double boiler one-half hour. Serves 8 to 10.

Tea.¹

1 teaspoon green or 2 teaspoons black tea.	2 cups boiling water (freshly boiling.)
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Scald teapot, put the tea in the teapot and pour boiling water over it; steep 3 minutes, strain, and serve. Serves 4.

Coffee.¹

Use two tablespoons of ground coffee for each cup of boiling water that is to be used. Put the coffee in the coffee pot and add enough cold water to moisten the coffee and make it stick together, about one teaspoon of water to each tablespoon of coffee. Pour the boiling water over the coffee and boil it for 3 minutes. Place it where it will keep hot, but not boil, for 5 minutes or more, and then serve. (If a small amount of egg white and shell is mixed with the coffee grounds and cold water it will aid in settling the coffee.)

¹ The recipes for coffee and tea are given so that the teacher can discuss their preparation with the girls and compare their value with the value of cocoa. If coffee and tea are both commonly used in the homes, it may be well to have the girls prepare them in the class, to be sure that they appreciate the importance of proper cooking.

METHOD OF WORK.

Begin the lesson period with a discussion of the methods of preparing cakes and put the cake in the oven as soon as possible. While it is baking prepare the cocoa. If the cocoa is not to be served for some time, it can be kept hot or reheated over hot water.

LESSON XVIII. YEAST BREAD.

SUBJECT MATTER.

Yeast bread is made light by the presence of a gas produced by the growth of yeast in the sponge or dough. Yeast is a microscopic plant which grows in a moist, warm temperature and feeds on starchy materials such as are present in wheat. A portion of the starch is converted into sugar (thus developing new and pleasant flavors), and some is still further changed, giving off the gas upon which the lightness of the bread depends. If the yeast is allowed to grow too long a time or the temperature is very hot, a souring of the dough may result. This souring can be prevented by kneading the dough thoroughly as soon as it has risen well or doubled in bulk or by putting it in a very hot oven to bake when it has reached this stage. If the dough becomes chilled, the yeast will not grow so well, and if the temperature of the dough should become hot the activities of the yeast would become arrested. A boiling temperature will destroy the growth of the yeast.

Yeast develops in a natural state on the hops and other plants. It is prepared for market in the form of dry or moist cakes. The moist cakes must be kept very cold. For home use a liquid yeast is often prepared from the dry cakes. This has the advantage of being more active.

When the yeast has been added to a batter it is spoken of as a sponge. When the batter has had enough flour added so that it can be handled it is called a dough. If the bread is to be made in a few hours, the yeast is made up at once into a dough. If it is to stand overnight, a sponge is often started first. More yeast is required for quick rising. Under ordinary circumstances one yeast cake is sufficient for 1 quart of liquid. Thorough kneading and baking are both essential to the success of the bread.

PRELIMINARY PLAN.

Arrange to have the class meet the afternoon before to start the sponge and come early in the morning to care for the dough. Begin the study of flour, yeast, and bread in a previous class period, correlating the work with geography, nature study, or some other subject. Either white or whole-wheat flour may be used for the breads.

RECIPES.

Bread.

(Prepared with dry yeast.)

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|------------------------------------|-------------------------------|
| 1 dry yeast cake. | 2 teaspoons salt. |
| 1 cup warm water. | 2 tablespoons sugar. |
| 1 cup flour. | 2 tablespoons lard or butter. |
| 1 quart water or milk (scalded). | |
| Flour enough to make a soft dough. | |

At noon put a dry yeast cake to soak in a cup of warm water. When it is soft, add a cup of flour, cover, and put in a warm place to grow light. This will require several hours.

In the evening when ready to start the dough, mix salt, sugar, fat, and hot liquid in a large bowl; when lukewarm add the cup of light yeast and enough flour to knead (about three quarts). Mix thoroughly and knead it into a smooth dough, and continue until it is soft and elastic. Return dough to the bowl, moisten, cover, and set in a moderately warm place for the night. Be sure that the place is free from drafts. In the morning knead slightly; divide into loaves or shape in biscuits; put into pans for baking; cover and let rise until double in bulk. Bake large loaves 50 to 60 minutes. Biscuits will bake in from 25 to 35 minutes, for they require a hotter oven. (Makes 4 loaves). It is of utmost importance that all yeast breads be thoroughly cooked.

(Time required for making bread with dry yeast, 16 to 20 hours.)

Bread.

(Prepared with compressed yeast.)

- | | |
|---------------------------------|--|
| 2 cups milk or water (scalded). | $\frac{1}{4}$ cake compressed yeast (1 cake if set |
| 2 teaspoons salt. | in morning.) |
| 2 teaspoons sugar. | $\frac{1}{4}$ cup water (lukewarm). |
| 1 tablespoon lard or butter. | Flour, white or whole wheat. |

Put the hot water or milk, salt, sugar, and fat in a bowl; when lukewarm add the yeast softened in the lukewarm water, then the flour gradually, and when stiff enough to handle, turn dough out on floured board and knead until soft and elastic (20 minutes). Return dough to the bowl, moisten, cover, and let it rise in a warm place until double its bulk; then knead slightly, divide into loaves, or shape into biscuits, cover and let rise in the pan in which they are to be baked until double in bulk, and bake 50 to 60 minutes. (Makes 2 loaves.)

(Time required for making bread, if one cake compressed yeast is used, 6 hours.)

See Farmers' Bulletins: No. 389, Bread and bread making; No. 807, Bread and bread making in the home.

METHOD OF WORK.

If the class is large, prepare two or three bowls of sponge, so that all can have some experience in stirring and kneading. Do not make too large a quantity of bread to bake in the oven unless arrangements can be made to do some of the baking at the near-by home of one of the girls. Use the bread for the school lunch or divide it among the girls to take home.

Plan a bread contest so that each girl will be interested to make bread at home.

LESSON XIX. SERVING A SIMPLE DINNER WITHOUT MEAT. BAKED OMELET. MACARONI AND CHEESE.

PRELIMINARY PLAN AND METHOD OF WORK.

At some previous time the teacher should talk over the plans for the dinner with the girls. It will be well to let them ask the members of the school board or other people interested in their work to partake of the dinner. They should decide on the menu with help and suggestions from the teacher. They should choose foods that they can bring from their homes. The main course of the dinner should consist of such a vegetable dish as baked beans, cowpeas, an omelet, or macaroni with white sauce and grated cheese. To accompany it there should be potatoes and a fresh green vegetable, such as spinach or cabbage and a hot bread.

A simple dessert which the girls know how to make should be chosen. One duty should be assigned to each girl and she should be entirely responsible for that portion of the work. The teacher should supervise all the work carefully.

The girls may be able to make simple menu cards for the dinner. The work of making the cards can be taken up in a drawing lesson.

RECIPES.

Baked Omelet.

2 tablespoons butter.	1 cup milk, heated.
2 tablespoons flour.	4 eggs.
$\frac{1}{2}$ teaspoon salt.	2 teaspoons fat.
Pepper.	

Melt the butter, add the flour and seasonings, combine thoroughly, then add the hot milk slowly. Separate the eggs, beat the yolks, and add the white sauce to them. Beat the whites until stiff and cut and fold them carefully into the yolk mixture so that the lightness is all retained. Turn into a greased baking dish and bake in a moderate oven 20 to 30 minutes. Serve hot. Serves 6.

Macaroni and Cheese.

1 cup macaroni, noodles, or rice.	Pepper.
2 tablespoons fat.	$1\frac{1}{2}$ cups milk.
3 tablespoons flour.	1 cup grated cheese.
$\frac{1}{2}$ teaspoon salt.	
2 cups buttered bread crumbs (two tablespoons butter or other fat).	

Break the macaroni in 1-inch pieces and cook it in a large amount of boiling water salted 30 to 45 minutes. Drain it well when tender and pour cold water through it.

Grate the cheese, break up the bread crumbs, and add two tablespoons melted butter to them. Make a white sauce of the fat, flour, seasonings, and milk. Add the macaroni and cheese to the white sauce, pour it into a butter-baking dish, cover with bread crumbs, and bake from 20 to 30 minutes in the oven, browning nicely. Serves 8.

LESSON XX. SUGAR.

Food value and cooking. The use of peanuts in candy. Peanut cookies, or peanut, molasses, or fudge candies to be made for a special entertainment.

SUBJECT MATTER.

Sugar is valuable to the body as a source of heat and energy. While it is easy of digestion, it is very irritating to the body if taken in large quantities, and hence it should be taken in small quantities and preferably at meal time or with other food. Two or three pieces of candy taken at the end of the meal will not be harmful, but candy eaten habitually between meals is sure to produce harmful effects in the body. Large quantities of candy are always disturbing to the body.

Sugar is present in many fruits and some vegetables. Milk contains a good per cent of sugar. In preparing foods to which the addition of sugar seems desirable, care should be taken not to add it in large quantities.

PRELIMINARY PLAN.

As it is desirable to have a discussion of sugar and its value to the body, the preparation of cookies or candy for some school function or Christmas party can be undertaken in conjunction with this lesson. The lesson should be given at a time when it will mean most to the girls. The work should be so planned that the girls will learn something of the principles of sugar cookery as well as the specific recipes they are using.

RECIPES.

Cookies.

1 cup fat.	3 cups flour.
1 cup sugar.	3 teaspoons baking powder.
2 eggs.	1 tablespoon cinnamon.
$\frac{1}{2}$ cup milk.	$\frac{1}{2}$ cup sugar.

Cream the butter, add sugar and well-beaten eggs. Then add milk alternately with flour (sifted with baking powder). Mix to the consistency of a soft dough, adding more milk if necessary. Roll lightly, cut in shapes, and dip in the one-half cup sugar and cinnamon that have been sifted together. Place on buttered sheets, and bake in a hot oven about 10 minutes. Slip from pan and lay on cake cooler. To make a softer cooky, use only one-half cup butter in recipe. (3 to 4 dozen.)

Peanut Cookies.

2 tablespoons butter.	$\frac{1}{2}$ cup flour.
$\frac{1}{2}$ cup sugar.	2 tablespoons milk.
1 egg.	$\frac{1}{2}$ cup finely chopped peanuts.
1 teaspoon baking powder.	$\frac{1}{2}$ teaspoon lemon juice.
$\frac{1}{2}$ teaspoon salt.	2 dozen whole peanuts shelled.

Cream the butter, add the sugar and the egg well-beaten. Mix and sift dry ingredients, add to first mixture, then add milk, peanuts, and lemon juice. Drop from the teaspoon onto an unbuttered baking sheet, an inch apart, and place $\frac{1}{2}$ peanut on top of each. Bake 12 to 15 minutes in a moderate oven. (2 $\frac{1}{2}$ to 3 dozen.)

Peanut Brittle.

1 cup sugar.

1 cup peanuts (1 quart with shells on).

Heat sugar until it all melts and liquid becomes clear, remove immediately, add peanuts, chopped if desired, mixing them in thoroughly; quickly spread upon a smooth tin or iron sheet, press into shape with knife and cut into bars or squares. Serves ten.

Molasses Candy.

2 cups molasses.

1 tablespoon vinegar.

$\frac{3}{4}$ cup sugar.

$\frac{1}{2}$ teaspoon soda.

2 tablespoons butter.

Put molasses, sugar, and butter into a thick saucepan or kettle, and stir until sugar is dissolved. Boil until mixture becomes brittle when tried in cold water. Stir constantly at the last to prevent burning. (Butter may be omitted if it can not be easily secured.)

Add vinegar and soda just before removing from fire.

Pour into a well-greased pan and let stand until cool enough to handle. Then pull until light and porous and cut in small pieces with scissors, arranging on buttered plates. Serves 16 to 20.

Caramel Fudge.

2 cups sugar.

1 tablespoon butter.

1 cup milk.

$\frac{1}{2}$ cup nuts, broken up.

$\frac{1}{2}$ cup caramelized sugar.

Boil sugar and milk together, add caramelized sugar and butter, and boil to the soft ball stage. Take from fire and beat until the candy becomes creamy. Add nuts and turn into buttered pans; when cool cut into squares. Serves 16 to 20.

See Farmers' Bulletin No. 535, "Sugar and its value as food."

METHOD OF WORK.

Devote a separate period to the discussion of the food value and cooking of sugar, if possible; then assign two recipes for the practical work, allowing the girls to work in groups. Assign only as much work as can be carefully supervised. Do not undertake both the cookies and the candy.

TWENTY LESSONS IN SEWING.

For the Rural Schools.

OUTLINE OF THE COURSE.

- Lesson I.** Preparation for sewing. Preparation and use of working equipment: Needles, pins, thread, tape measure, thimble, scissors, box for work. Talk on cleanliness and neatness (care of hands, etc.). Discussion of hemming. Hems folded on sheets of paper.
- Lesson II.** Hemming towels. Turning and basting hems. Hemming towels of crash, flour, or meal sacks, or other coarse material for use in washing and drying dishes at home or in school.
- Lesson III.** Hemming towels, continued. The overhanding stitch and the hemming stitch.
- Lesson IV.** Bags. A school bag. Bag (made of obtainable material) to hold sewing materials or cooking apron. Measuring and straightening the material for the bag. Basting the seams.
- Lesson V.** Bags, continued. Sewing up the seams with a running stitch and a back stitch.
- Lesson VI.** Bags, continued. Overcasting the seams and turning the hem at the top of the bag.
- Lesson VII.** Bags, continued. Hemming the top of the bag and putting in a running stitch to provide a space for the cord.
- Lesson VIII.** Bags, continued. Preparing a cord or other draw string for the bag. Putting a double draw string in the bag so that it can easily be drawn up. Use of the bodkin.
- Lesson IX.** Darning stockings. Use of a darning ball or a gourd as a substitute for the ball. Talk on care of the feet and care of stockings.
- Lesson X.** Patching (used when special problem comes up). Hemming patches on cotton garments. Talk on care of clothes.
- Lesson XI.** Cutting out an apron (or an undergarment).¹
- Lesson XII.** Apron (or undergarment), continued. Basting the hem for hemming on the machine or by hand. Uneven basting.
- Lesson XIII.** Apron (or undergarment), continued. Gathering the skirt and stitching to the belt.
- Lesson XIV.** Apron (or undergarment), continued. Making the bib.
- Lesson XV.** Apron (or undergarment), continued. Making the straps.
- Lesson XVI.** Apron (or undergarment), continued. Putting the bib and skirt on to the belt.
- Lesson XVII.** Methods of fastening garments. Sewing buttons on aprons, petticoats, or other garments.
- Lesson XVIII.** Methods of fastening garments, continued. Button holes on practice piece and on apron.
- Lesson XIX.** A padded holder for handling hot dishes. Binding.
- Lesson XX.** A cap to wear with the cooking apron.

SUGGESTIONS TO THE TEACHER.

The teacher should be well acquainted with the conditions in which the girls live, should know how much money they can afford to pay for materials, what materials are available, what previous handwork the girls have had, whether they can afford to have sewing machines in their own homes, to what extent they make their own clothes, and to what extent they buy them ready-made.

The lessons should be planned to furnish hand training, to give the instruction of which the girls can immediately make use in the care of their own clothes, and to provide opportunity for preparing the apron for the cooking lessons that are to follow. They should tend to

¹ Should the teacher feel that an apron or petticoat is too large a piece for her girls to undertake, and should she desire to have more time put on the first 10 lessons, Lessons XI to XVIII may be omitted, two periods each devoted to both Lessons XIX and XX, and three lessons used for the making of a simple needle book or other small piece.

develop habits of thrift, industry, and neatness. The girls should be encouraged to learn to sew, both to improve their own home conditions and to give them suggestion for a possible means of livelihood. If sewing machines are available and are in use in the homes represented in the school, it is well to have lessons given in machine sewing and to have the long seams run by machine. If the girls can not have sewing machines in their own homes, the lessons given should be limited to hand sewing. In some schools it may be necessary to simplify the lessons; in others an increased number of articles may be prepared in the time allotted. Should the apron and cap not be needed for the cooking class, an undergarment (petticoat) can well be substituted.

The teacher should have a definite plan of procedure in mind for each lesson. The lesson should be opened with a brief and concrete class discussion of the new work that is to be taken up or the special stage that has been reached in work that is already under way. Though individual instruction is necessary, it should not take the place of this general presentation of subject matter, which economizes time and develops the real thought content of the work.

New stitches can be demonstrated on large pieces of muslin with long darning needles and red or black Germantown yarn. The muslin may be pinned to the blackboard with thumb tacks and the stitches made large enough for all to see without difficulty. A variety of completed articles should be kept on hand to show additional application of points brought out in the lesson. Each class may be given the privilege of preparing one article to add to this collection, and a spirit of class pride and valuable team work thereby developed.

During the lesson, posture, neatness, and order should be emphasized. Application can be secured by making the problems of interest. Care must be taken that none of the work demands unnecessary eye strain. Each lesson should be closed in time to have one of the members of the class give a brief summary of the steps that have been covered.

Since the class period for sewing in the rural school will necessarily be brief, the girls can be encouraged to continue their work at some other period. However, no work outside of the class period should be permitted until the pupil has mastered the stitch and can be trusted to do the work in the right way. The privilege of sewing can be made the reward for lessons quickly learned, home practice can be assigned, or the class can meet out of school hours. All outside practice must be carefully supervised, the pupil bringing her work to the teacher for frequent inspection.

If it is possible to keep on hand a permanent equipment for sewing, the following should be provided for a class of 12:

	Approximate cost.
Scissors, 1 dozen.....	\$3.00
Thimbles, 1 dozen.....	.25
Tape measures, 1 dozen.....	.40
Emery, 1 dozen.....	.40
Boxes for work, 1 dozen.....	.84
	<hr/> 4.89

The teacher who is to give lessons in sewing should secure a helpful elementary textbook on sewing or some bulletin that deals with the teaching of sewing. Such bulletins are issued in some States by the extension departments of the State university, college, or normal schools. A leaflet that will prove of value, entitled "Sewing for Rural Schools" (Vol. VII, No. 7), is published by the Hampton Normal and Agricultural Institute, Hampton, Va. It will be sent free to southern teachers upon request.

A suggestive list of textbooks on sewing, for use in elementary rural schools.

- Burton, Ida R. and Myron G.—"School Sewing, Based on Home Problems." Price, \$1. Vocational Supply Co., Indianapolis.
- Flagg, Etta P.—"Handbook of Elementary Sewing." Price, 50 cents. Little, Brown & Co., Boston.
- Fuller, M. E.—"Constructive Sewing Book I" (paper). Price, 60 cents. Industrial Book & Equipment Co., Indianapolis.
- Hagood, Olive C.—"School Needlework." Price, 50 cents. Ginn & Co., Boston.
- Kinne, Helen, and Cooley, Anna M.—"Clothing and Health." Price, 65 cents. The Macmillan Co., New York City.
- McGlaulin, Idabelle.—"Handicraft for Girls." Price, \$1. The Manual Arts Press, Peoria, Ill.
- Patton, Frances.—"Home and School Sewing." Price, 60 cents. Newson & Co. New York City.
- Woolman, Mary S.—"A Sewing Course." Price, \$1.50. Frederick A. Fernald, Washington.

DETAILED LESSON PLANS FOR THE COURSE IN SEWING.

LESSON I. PREPARATION FOR SEWING.

Preparation and use of working equipment: Needles, pins, thread, tape measure, thimble, scissors, box for work. Talk on cleanliness and neatness (care of hands, etc.). Discussion of hemming. Hems folded on sheets of paper.

SUBJECT MATTER.

A hem is a fold used to finish a cut surface, made by twice turning over the edge of a piece of cloth toward the worker, and then sewing it down. In turning a narrow hem the first fold must be less deep than the second, in order that the hem may lie smoothly. If the hem is a wide one, the first fold can be much less deep than the second.

PRELIMINARY PLAN.

The teacher should have interested the children in the sewing lessons before the first meeting of the class, and each girl should be asked to come to class with the box in which to keep her materials and such other equipment as is required. If the school is to furnish the equipment, the teacher should be sure that there is an adequate amount on hand.

It will probably be necessary to have towels hemmed to be used in the cooking classes at school, and the girls should be interested in doing the hemming. If some of the girls want to hem towels for use in their own homes, it will be desirable to allow them to do so. Flour or meal sacks will answer. It may be well to have the girls each hem a towel for home use as well as for school use, in order to impress them with the desirability of having hemmed dish towels for daily use. The towels can be planned during this lesson and the girls can arrange to bring the material from home, if they are to provide them. It will be well for the teacher to have material for one or two towels already on hand. Plain paper will answer for the practice folding of the hem in the first lesson.

METHOD OF WORK.

The teacher should devote a few minutes to a talk on cleanliness, emphasizing the importance of cleanliness, and the necessity for care in handling the sewing materials. This should be followed by a discussion of the care of the hands and the condition in which the

hands should be for the sewing lesson. Each girl should inspect her own hands and show them to the teacher.

When sure that all the girls have their hands in proper condition for sewing, the teacher should look over their supplies with them, give them suggestions as to how they are to keep the supplies, and have them arrange their boxes.

Next she should tell them what their first work is to be, show them the material for the towels, and discuss with them the best method of finishing the ends of the towels. (See Lesson II.)

Before turning the hem the girls should make a cardboard ruler from heavy paper and notched to indicate the depth of the hem. A few minutes should be devoted to practice in measuring and turning a hem the desired depth on a sheet of paper. This should give experience with the double turning necessary—first, the narrow turn to dispose of the cut surface; second, the fold to finish the edge.

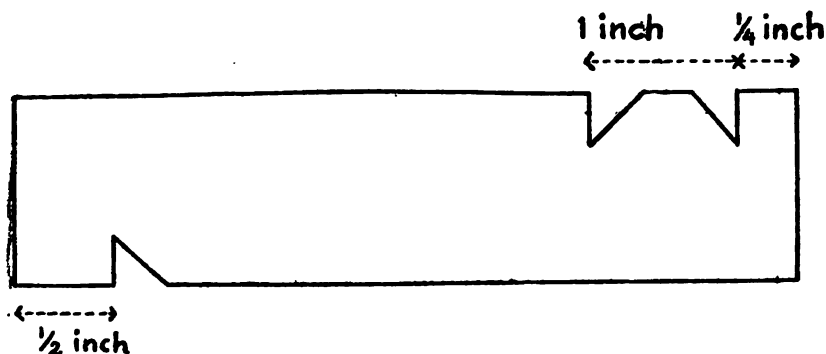


FIG. 2.—Gauge.

Careful measuring should help to give the girls practice, so that they will be able to measure with the eye a designated distance in inches or fraction of an inch.

When the lesson hour has come to an end the boxes should be put away in systematic order. All scraps should be always carefully picked up from the desks and floor.

LESSON II. HEMMING TOWELS.

Turning and basting hems. Hemming towels of crash, flour or meal sacks, or other material, for use in washing and drying dishes at home or in school.

SUBJECT MATTER.

Basting is used to hold two pieces of material together until a strong stitch can be put in. It is done by taking long stitches (one-fourth inch) from right to left and parallel to the edges that are to be basted together. In starting the thread is fastened with a

knot; when completed it is fastened by taking two or three stitches one over the other.

PRELIMINARY PLAN.

The teacher should have the necessary materials for sewing on hand, or should have them supplied by the children. The materials needed will include material for towels, white thread for basting and hemming, and cardboard pieces for measuring.

The teacher should also have a large square of unbleached muslin or canvas, 18 by 18 inches, and a large darning needle and colored worsted thread to use for demonstration purposes. The canvas should be pinned to the blackboard, where the class can see it easily.

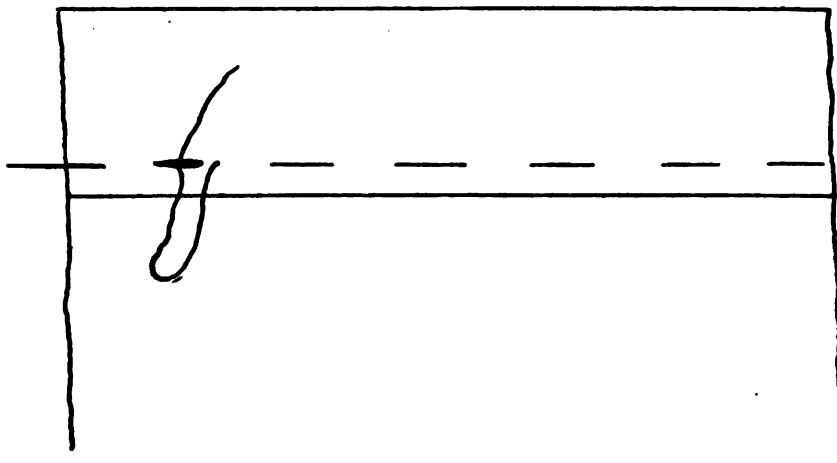


FIG. 3.—Even basting.

METHOD OF WORK.

As soon as class is called, supplies are at hand, and hands are in proper condition, the teacher should demonstrate the basting stitch with a large needle and thread on the square of canvas that has been fastened on the wall. Materials should be passed for work. Each girl should straighten the ends of her towel by drawing a thread. Then she should turn and baste a hem three-eighths of an inch in depth at each end.

At the close of the lesson the girls should fold up their work carefully and put it neatly in their boxes.

LESSON III. HEMMING TOWELS (Continued).

The Overhanding Stitch and the Hemming Stitch.

SUBJECT MATTER.

Overhanding (also called overseaming or whipping).—The edges to be overhanded are held between the first finger and thumb of the left hand with the edge parallel to the first finger. The needle is inserted just below and perpendicular to the edge. The needle is pointed straight toward the worker. The stitches proceed from right to left, each stitch being taken a little to the left of the preceding stitch.

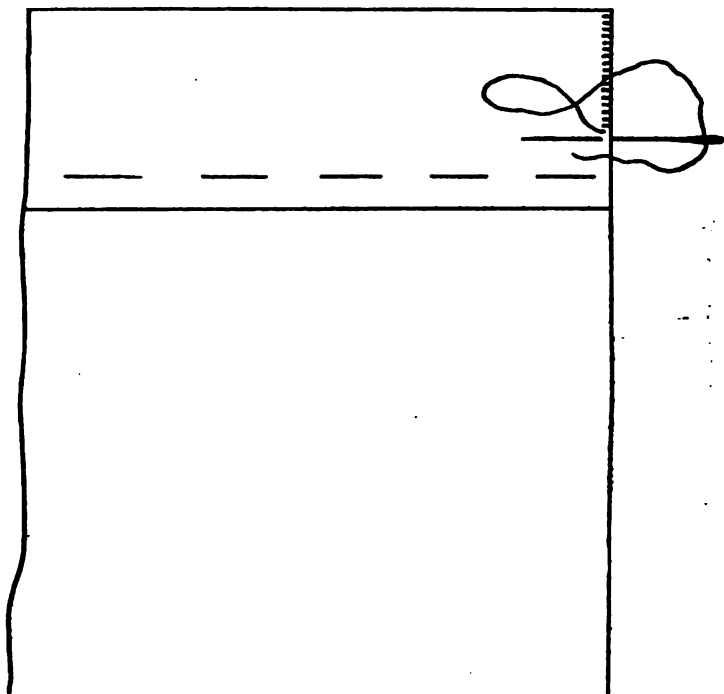


FIG. 4.—Overhanding.

The stitches should all be straight on the right side, but they will slant a little on the wrong side. The stitches should not be deep. It may be desirable to use this overhanding stitch at the ends of hems to hold the edges of the material together. The overhanding stitch is also used for seams, for patching, and for sewing on lace.

The overhanding of narrow hems is not always necessary, but the ends may be made stronger thereby, and the stitch is a valuable one for the girls to know.

Hemming.—The hemming stitch is placed on the inside of the hem. The end of the basted hem is laid over the first and under the second finger of the left hand with the folded edge outside and the material

toward the worker. It is held in place with the thumb. The stitch is begun at the end of the hem. The fastening of the thread is concealed by slipping it underneath the hem in the inside fold of the material. The needle is pointed over the left shoulder, a small stitch is taken through the material just under the hem, then through the edge of the hem. This is repeated, making the next stitch nearer the worker, and moving the goods from right to left away from the worker as necessary. Uniformity of slant, size, and spacing of stitches is important.

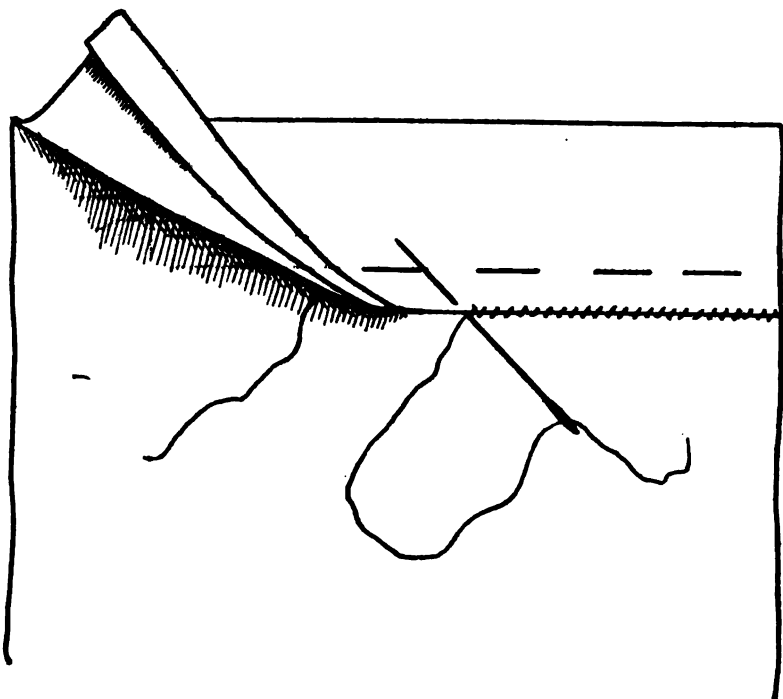


FIG. 5.—Hemming.

PRELIMINARY PLAN.

Before this lesson is given, all the girls should report to the teacher with both ends of their towels basted so that they will all be ready to proceed at once with the new stitches.

METHOD OF WORK.

The teacher should begin the lesson by demonstrating the stitches to be used on the large square of canvas, with the large needle and heavy thread. After overhanding the end of the hem, the hemming stitch should follow with the same thread. The girls will probably not be able to finish the hemming in this first lesson, so provision should be made for additional time. This can be required as an out-

side assignment, if they have mastered the method during the class period. The teacher may be able to give them some supervision while she is looking after other classes.¹

LESSON IV. BAGS.

A school bag. Bag (made of material obtainable) to hold sewing materials or the cooking apron. Measuring and straightening the material for the bag. Basting the seams.

SUBJECT MATTER.

The basting stitch will be used as a review of work in the second lesson.

PRELIMINARY PLAN.

At some previous time the teacher should talk with the girls about what material they will be able to provide for their bags, and, if the material has to be purchased, she should suggest something that is suitable, washable, and inexpensive. The bag should cost only a few cents. If the bag is to be used for carrying the cooking apron back and forth from home, it must not be too light in color. The dimensions of the finished bag should be about 12 by 18 inches.

METHOD OF WORK.

The girls should get out the materials they have brought for their bags and determine upon their size and shape. It will not be necessary for them to make bags of uniform shape and size. The teacher should help them to use their material to the best advantage. The material should be straightened, pulled in place, and measured carefully. When the bags have been cut out, the sides should be basted up.

LESSON V. BAGS (Continued).

Sewing up the seams with a running stitch and a back stitch. /

SUBJECT MATTER.

Running is done by passing the needle in and out of the material at regular intervals. Small, even stitches and spaces should follow consecutively on both sides of the material. The stitches should be much shorter than for basting, the length being determined largely by the kind of cloth used.

When running is combined with a back stitch, two or more running stitches and one back stitch are taken alternately. The back stitch is a stitch taken backward on the upper side of the cloth, putting the needle back each time into the end of the last stitch and bringing it out the same distance beyond the last stitch.

¹ If the girls have time to do more hemming than the towels require, they may enjoy making simple curtains of plain mull or dotted swiss for the windows of the schoolroom. This work can be taken up in additional lesson periods or after school hours.

PRELIMINARY PLAN.

The teacher should be sure that all the teachers are ready to report, with the sides of their bags basted ready for stitching.

METHOD OF WORK.

The teacher should first demonstrate the running stitch with the back stitch, and the girls should begin to sew up the sides of the bag, using the running stitch. They should commence the running stitch at three-fourths of an inch from the upper end of the bag, so that there will be a space left for slits in the hem to run the cord.¹ The

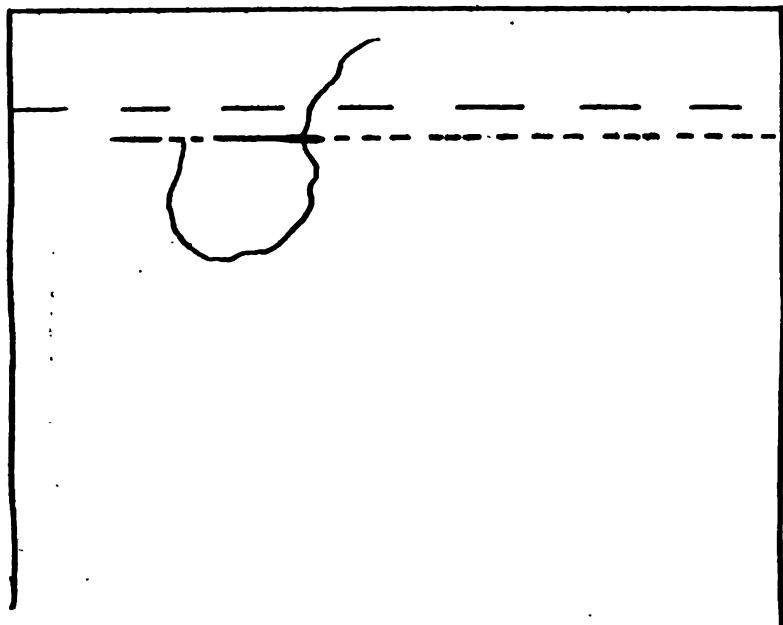


FIG. 6.—Running stitch with a back stitch.

seams will doubtless have to be finished outside of the class hour and should be assigned for completion before the next lesson.

LESSON VI. BAGS (Continued).

Overcasting the seams and turning the hem at the top of the bag.

SUBJECT MATTER.

Overcasting is done by taking loose stitches over the raw edge of the cloth to keep it from raveling or fraying.

¹ The draw string or cord is to be run through the hem from the inside of the bag and it will be necessary to leave three-fourths of an inch of space at the ends of the seams to provide slits for the cord outlets.

PRELIMINARY PLAN.

The teacher should be sure that all the girls are ready to report, with the sides of their bags neatly sewed up with the running stitch.

METHOD OF WORK.

The teacher should demonstrate the method of overcasting and explain its use. She should have the girls trim the edges of their seams neatly and overcast them carefully. After the seams have been overcast, she should discuss with the girls the depth of the hem that they expect to use and the method of turning and basting it. The girls should turn and baste the hems, using the cardboard measure for securing the depth of the hem. If the bags are deep enough to admit of a heading at the top, a deep hem (about 2½ inches) can be made and a running stitch put in one-half inch (or

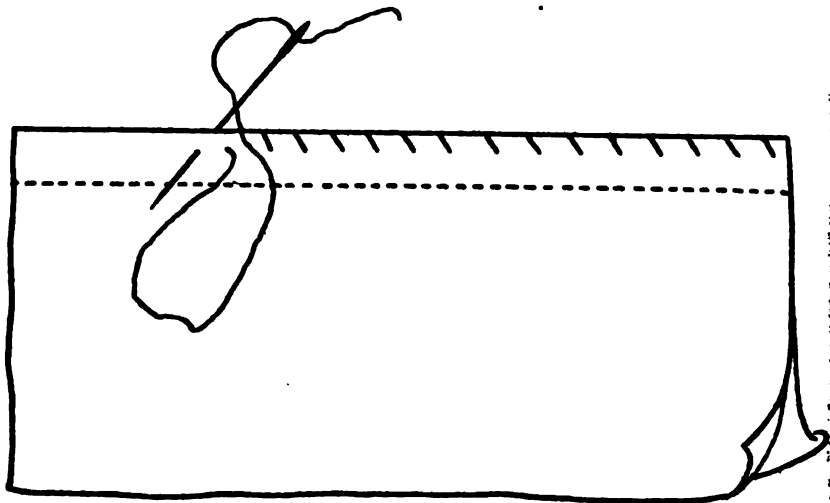


FIG. 7.—Overcasting.

more) above the edge of the hem to provide a casing or space for the cord. If it is necessary to take a narrow hem, the hem itself can be made to answer as space for the cord; in this case the hem should be made about one-half inch deep.

LESSON VII. BAGS (Continued).

Hemming the top of the bag, putting in running stitch to provide a space for the cord.

SUBJECT MATTER.

Review of hemming stitch and running stitch.

PRELIMINARY PLAN.

The girls should report to the class with the hems basted.

METHOD OF WORK.

The teacher should review briefly with the girls the method of making the hemming stitch and the running stitch, asking them to describe these stitches and to demonstrate them on the large square of canvas before the class. The basted hems should then be sewed down with the hemming stitch.

After the hem is finished the girls should run a basting thread around the bag to mark the location of the running stitch that is to be half an inch above the hem. They should measure for this carefully with the cardboard rule.

If there is not time to do all the hemming in the class period, the hemming stitch and the running stitch (that is to provide space for the draw string) should be assigned for outside work, and each girl should bring in her finished hem at a designated time before the next class period.

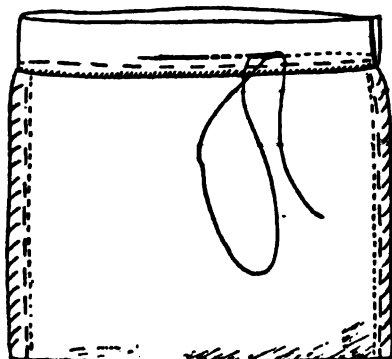


FIG. 8.—Bag nearly completed.

From Junior Circular No. 26, Agricultural Extension Department, Ames, Iowa.

LESSON VIII. BAGS (Continued).

Preparing a cord or other draw string for the bag. Putting in a double draw string in the bag so that it can easily be drawn up. Use of the bodkin.

SUBJECT MATTER.

To make a cord, it is necessary to take more than four times as much cotton as the final length of the cord will require, for some of the length will be taken up in the twisting of the cord. The cord should be doubled, the two lengths twisted together firmly, and the ends brought together again and held in one hand while the center is taken in the other hand, and the lengths are allowed to twist firmly together. The ends should be tied. It will be easier for two to work together in making a cord. The cord should be run into the bag with a bodkin or tape needle. If one cord is run in from one side, and another is run in from the other side, each cord running all the way around, the bag can be drawn up easily.

PRELIMINARY PLAN.

If the children are not able to supply cords for their own bags, the teacher should have a sufficient supply of cord on hand. She should be sure the girls' bags are in readiness for the cord before the class period.

METHOD OF WORK.

The teacher should begin the lesson by describing the method of making the cord, estimating the amount necessary, and demonstrating the process with the assistance of one of the girls. The girls should be numbered so that they can work in groups of two. After they have completed the cord, and run it into the bag, methods of finishing the ends neatly should be suggested to them.

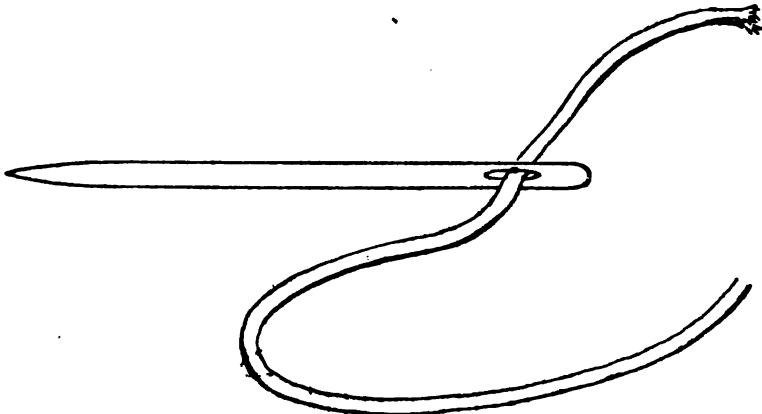


FIG. 9.—Bodkin.

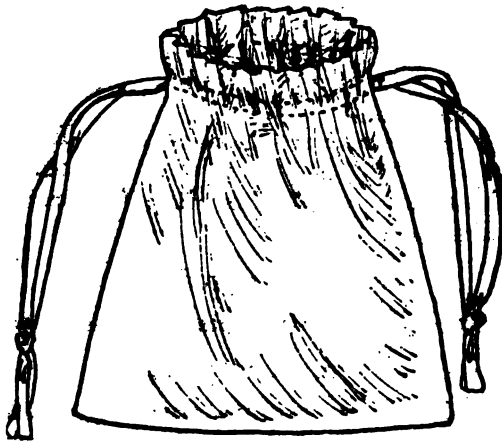


FIG. 10.—Completed bag.

From Junior Circular No. 26, Agricultural Extension Department, Ames, Iowa.

LESSON IX. DARNING STOCKINGS.

Use of darning ball or gourd as a substitute for ball. Talk on care of the feet and care of the stockings.

SUBJECT MATTER.

This lesson will involve running and weaving. Darning is used to fill in a hole with thread so as to supply the part that has been de-

stroyed or to strengthen a place which shows signs of weakness. A darning ball, gourd, or a firm piece of cardboard should be placed under the hole. The darn should extend one-quarter of an inch beyond the edge of the material, beginning with fine stitches in the material, making rows of stitching close together in one direction, then crossing these threads with rows that run at an angle to them. Care should be taken to alternately pick up and drop the edge of the material about the hole so that no raw edges will be left and to weave evenly in and out of the material and of the cross threads.

PRELIMINARY PLAN.

Each girl should provide a pair of stockings with a few small holes and a gourd or ball of some sort that she can use for a darning ball.

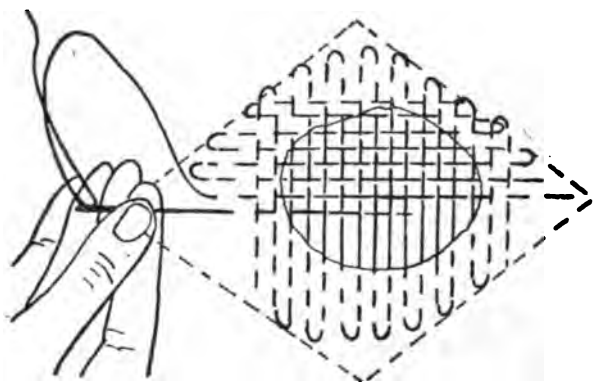


FIG. 11.—Darning.

From Junior Circular No. 26, Agricultural Extension Department, Ames, Iowa.

METHOD OF WORK.

When the class meets the teacher should discuss briefly the care of the feet, and of stockings, and demonstrate the method of darning on a large piece of coarse material with heavy yarn and a needle. If the girls finish one darn during the

lesson period, the making of another darn for practice outside of class should be assigned.

LESSON X. PATCHING.¹

Hemmed patches on cotton garments. Talk on care of clothes.

SUBJECT MATTER.

This lesson will involve measuring, trimming, basting, and hemming. A patch is a piece of cloth sewed on to a garment to restore the worn part. The material used for the patch should be as nearly like the original fabric in color and quality as possible. In placing the patch, the condition of the material about the hole must be taken into consideration, as well as the size of the hole itself. The hole should be trimmed to remove worn parts near it. The patch should be 2 inches larger than the trimmed hole. The corners of the hole should be cut back diagonally, so that the edges may be turned

¹ Used when special problem comes up.

under. The patch should be matched and pinned onto the large piece, leaving the edges of the patch to project evenly on all four sides. The edges of the material about the hole should be turned in and basted to the patch. The edges of the patch should be turned in so that they extend one-half inch from the edge of the hole when finished. The patch and the cloth should be basted together and hemmed.

PRELIMINARY PLAN.

The lesson on patching should be given at any time in the course when it can be applied to an immediate need. If a girl snags her dress while playing at school or if she wears a torn apron, the teacher can announce a patching lesson for the next sewing class, and request each girl to bring a torn garment and the material for the patch from home. It may be desirable to use two or three periods for this lesson.

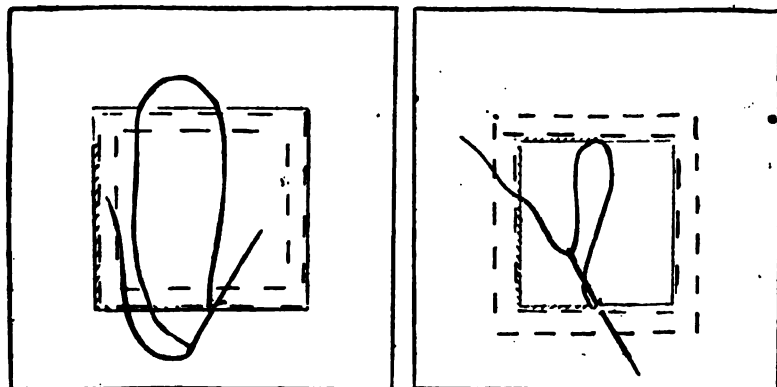


FIG. 12.—Patching.

From Junior Circular No. 26, Agricultural Extension Department, Ames, Iowa.

METHOD OF WORK.

The teacher should demonstrate the various processes of patching on a large piece of muslin. The girls should practice placing a patch on a piece of paper with a hole in it. Each process should be assigned in succession—examination of article, to determine its condition; calculation of size and preparation of patch; placing the patch; trimming the article about the hole; basting the patch and material together; and hemming the patch.

LESSON XI. CUTTING OUT APRONS OR UNDERGARMENTS.

SUBJECT MATTER.

When cutting out an apron, the length of the skirt should first be measured, and to this measure 6 inches should be added for hem and seams. One length of the material corresponding to this length

should be cut. This should be folded through the center lengthwise. Three-fourths of an inch should be measured down on this fold, and the material cut from the end of the selvage to this point in order to slope the front of the apron. When the waist measure is taken, 2 inches should be added to it (1 for the lap and 1 for finishing). Two pieces this length, and $2\frac{1}{2}$ inches wide, should be cut lengthwise of the material for the belt. A measure should be made from the middle of the back of the waist line, over the shoulder, to a point 5 inches to the right to the center front and on the waist line. Two pieces the length of this measure, and $4\frac{1}{2}$ inches wide, should be cut lengthwise of the material for the shoulder straps. A piece 9 by 12 inches should be cut for the bib, the longer distance lengthwise of the material. These measurements allow one-quarter inch for seams.

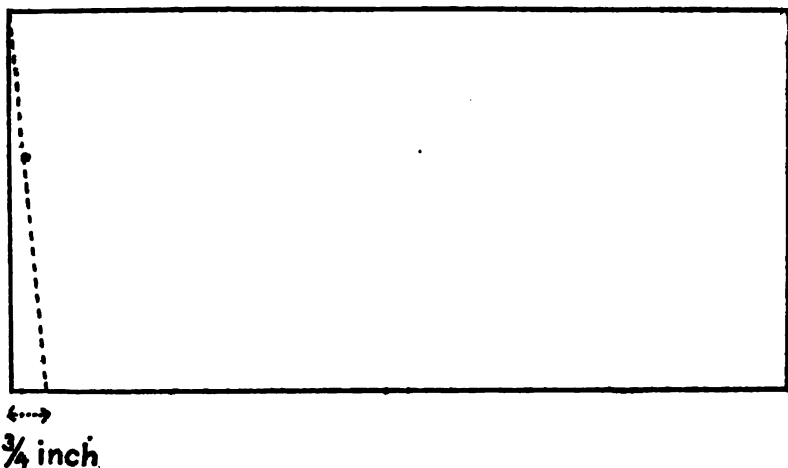


FIG. 13.—Cutting out skirt of apron.

PRELIMINARY PLAN.

Previous to the lesson the teacher should see if arrangements can be made to secure the use of one or two sewing machines, so that the girls can sew all the long seams of their aprons by machine.

At a previous lesson she should discuss with the girls the material of which they can make their aprons. They should consider whether the apron should be white or colored, and whether it should be of muslin, cambric, or gingham. Each girl will need from $1\frac{1}{2}$ to 2 yards of material, according to her size. The taller girls will need 2 yards.

There should be on hand a sufficient number of tape measures, pins, and scissors, so that the girls can proceed with the cutting of their aprons with no unnecessary delay.

The apron to be made is to have skirt, bib, and shoulder straps, in order to be a protection to both dress, skirt, and waist.¹

METHOD OF WORK.

As soon as the class meets, the girls should make the measurements for their aprons. One measurement should be assigned at a time and the reason for each measurement given. The girls should follow the measurements explicitly, as they are apt to become confused if directions are complicated. They should work carefully so that the material does not become mussed or soiled, and at the conclusion of the lesson they should fold it carefully and put it away neatly. All threads and scraps of material should be carefully picked up off the floor, and the room left in order.

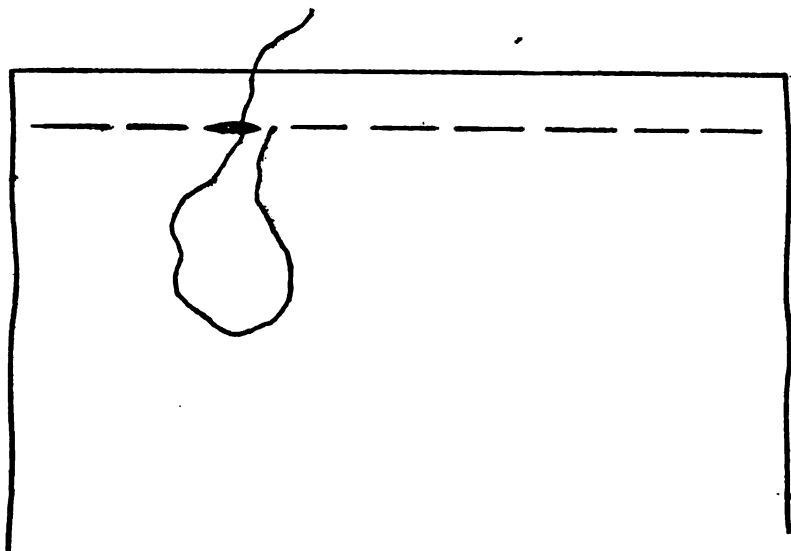


FIG. 14.—Uneven basting.

LESSON XII. APRONS OR UNDERGARMENTS (Continued).

Basting the hem for hemming on the machine or by hand. Uneven basting.

SUBJECT MATTER.

An uneven basting forms the better guide for stitching. In uneven basting the stitches are made about twice as long as the spaces between. The stitch should be about one-fourth of an inch on the upper side of the material and one-eighth inch on the under side.

¹ If the girls are very inexperienced and find the sewing difficult, it may be advisable to omit the bib and straps and to make the simple full-skirted apron. If a machine is not at hand to use for the long seams, the limits in time may make the simpler apron necessary. This will give more time for the various processes. Lessons XIV and XV can then be omitted, Lesson XVI made simpler, and less outside work required.

PRELIMINARY PLAN.

In addition to the apron material which has been cut out in the previous lesson, each girl should provide her own spool of thread (number "Sixty" white thread will probably answer for all the work), a piece of cardboard 5 inches wide to use for marker, and pins to use in fastening the hem.

METHOD OF WORK.

As soon as the class meets, the girls should prepare a 5-inch measure of cardboard to guide them in turning the hems of the skirts of their aprons. They should make a half-inch notch in the measure for the first turn in the material. A one-half inch edge should be turned up from the bottom of the skirt, then a 5-inch hem turned, pinned, and basted carefully with uneven basting. The card board marker should be used for both measurements.

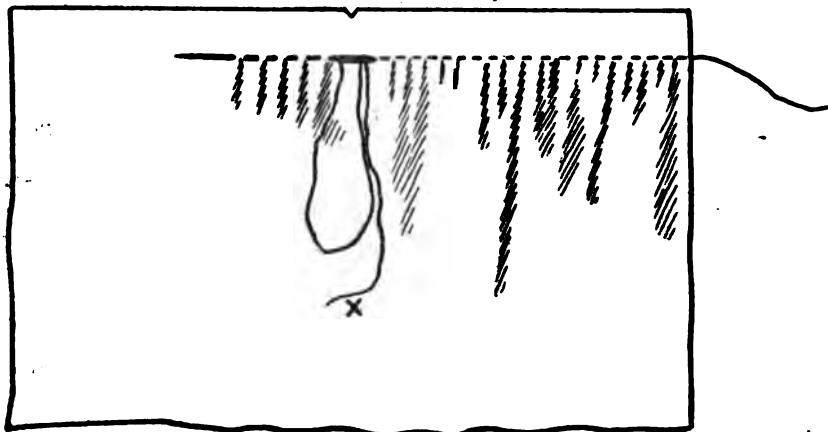


FIG. 15.—Gathering.

LESSON XIII. APRONS OR UNDERGARMENTS (Continued).

Gathering the skirt and stitching to the belt.

SUBJECT MATTER.

In gathering, the running stitch is employed. Small stitches are taken up on the needle with spaces twice as great between them. The top of the skirt should be divided into halves, and gathered with two long double threads, using fine stitches and placing them one-quarter inch from the edge. The center of the belt and the center of the top of the skirt of the apron should be determined upon. The belt should be pinned to the wrong side of the apron at these points, and the fullness drawn up to fit (approximately one-half of the waist measure). The skirt and belt should be pinned, basted, and sewed together.

PRELIMINARY PLAN.

If the hems have been completed in the skirts, the girls are ready to gather the skirts and attach them to the belt. It will be well to have pins on hand to use in fastening the skirt and belt together.

METHOD OF WORK.

The teacher should first demonstrate the method of gathering and assign that portion of the lesson. When the skirts have all been gathered she should show the girls how to measure, pin, and baste the skirt to the belt.



FIG. 16.—Sewing on the belt of the apron.
From Junior Circular No. 26, Agricultural Extension
Department, Ames, Iowa.

LESSON XIV. APRONS OR UNDERGARMENTS (Continued).

Making the bib.

SUBJECT MATTER.

A 2-inch hem should be turned across one short end of the bib. This should be basted and hemmed. The bottom of the bib should be gathered, using the method employed for the top of the skirt, and leaving enough thread to adjust the gathers easily.

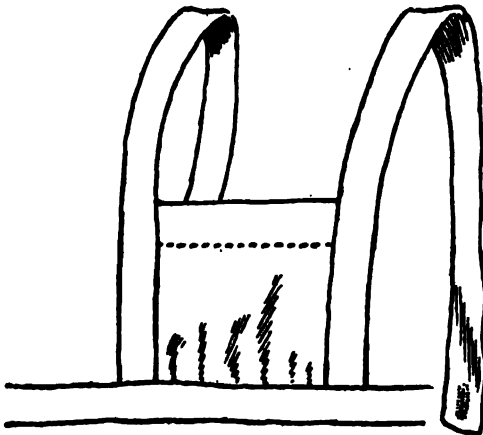


FIG. 17.—Bib and straps of apron.

PRELIMINARY PLAN.

If the girls have completed the skirts and attached them to the belts, they are ready to make the bibs. They should be provided with a 2-inch marker for use in making the hems in the top of the bibs.

METHOD OF WORK.

The teacher should guide the girls carefully in the making of the bibs, reviewing their knowledge of basting, hemming, and gathering.

LESSON XV. APRONS OR UNDERGARMENTS (Continued).**Making the straps.****SUBJECT MATTER.**

One end of one of the straps should be placed at the bottom of the bib. The side of the strap should be pinned, basted, and sewed to the right side of the bib with a running stitch. The other long side of the strap should then be turned in one-quarter of an inch and the ends turned in one-half of an inch. The strap should then be folded through the center for its entire length and the free side basted to the wrong side of the bib and hemmed down. The remaining edges of the strap should be overhanded together. The other strap should be sewed to the other side of the bib in the same way.

PRELIMINARY PLAN.

The bibs should have been completed before the girls report for this lesson.

METHOD OF WORK.

As soon as the girls report for the lesson, the teacher should explain the method of attaching the straps to the bib and tell them how to finish the straps. As they proceed with their work, she should supervise them carefully and assign the unfinished portion of the work for completion outside of the class.

LESSON XVI. APRONS OR UNDERGARMENTS (Continued).**Putting the bib and skirt on the belt.****SUBJECT MATTER.**

The center of the bottom of the bib should be determined, and pinned to the upper edge of the belt, to which the skirt has already been attached. The belt should be fastened to the wrong side of the bib. The gathering string of the bib should be drawn up, leaving 2 inches of fullness on each side of the center. The bib should be pinned, basted, and sewed to the belt. The remaining long edges of the belt should be turned in one-fourth inch, and the ends one-half inch. The edges of the other belt piece should be turned in the same way, and should be pinned over the belt to which the skirt and bib have been attached (with all the edges turned in), and basted carefully to keep the edges even. The skirt and bib should be hemmed to this upper belt, and all the remaining edges should be overhanded.

PRELIMINARY PLAN.

The bib and straps of the apron should be completed before the girls report for this lesson.

METHOD OF WORK.

The teacher should guide the girls carefully in the various steps necessary in fastening the bib to the belt and in completing the belt. If the hemming and overhanding is not completed during the class hour, they can be assigned for outside work.

LESSON XVII. METHODS OF FASTENING GARMENTS.

Sewing buttons on the aprons, petticoat, or other garment.

SUBJECT MATTER.

This lesson should teach neatness in dress through a consideration of the best methods of fastening garments. The position of the but-

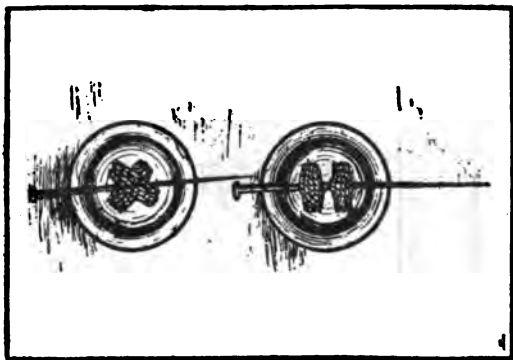


FIG. 18.—Sewing on buttons.

From Junior Circular No. 35, Agricultural Extension Department, Ames, Iowa.

ton is measured by drawing the right end of the band one inch over the left end. The location of the button should be marked with a pin on the left end of the band. A double thread is fastened on the right side of the band, drawn through one hole of the button, and back through the other, taking it through the band close to the first stitch. A pin should be inserted on top of the button under the first stitch, and left there until the button is firmly fastened in place; then removed. Before fastening the thread, it should be wrapped two or three times around the threads holding the button, between the button and the cloth, then fastened neatly on the wrong side with a few small stitches one on top of the other.

PRELIMINARY PLAN.

Each girl should come to the class with her apron as nearly completed as possible, and with three buttons to sew on it for fastening the belt and straps.

METHOD OF WORK.

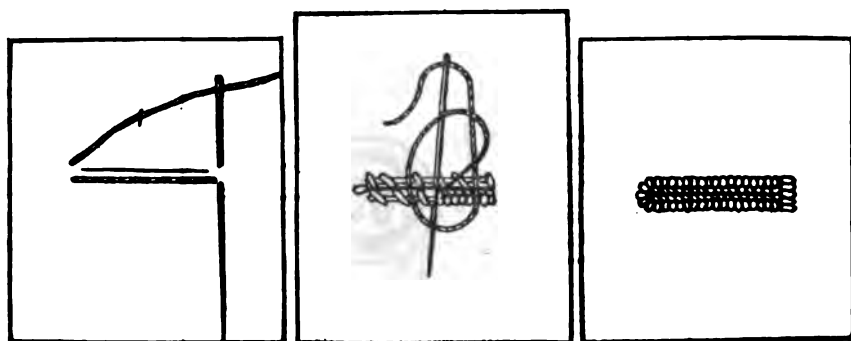
The teacher should discuss the best methods of fastening garments with the girls, and she should demonstrate the method of sewing on buttons. The girls should sew one button on the left end of the apron band in the middle of the width about 1 inch from the end and another button 4 inches from each end of the band to hold the shoulder straps.

LESSON XVIII. METHOD OF FASTENING GARMENTS (Continued.)

Buttonholes on practice piece, and on apron.

SUBJECT MATTER.

Directions for making the buttonhole.—Measure the location of the buttonhole carefully lengthwise of the band, so that the end will come



(a)
Starting the button hole.

(b)
The buttonhole stitch.

(c)
The finished button hole.

FIG. 19.—Working buttonholes.

From Junior Circular No. 35, Agricultural Extension Department, Ames, Iowa.

one-fourth inch from the edge of the garment. Mark the length of the buttonhole on the material by putting in two lines of running stitches at the ends. To cut the buttonhole, insert the point of scissors at the point marked by the running stitches nearest the edge of the garment and cut carefully along the thread of the material to the row of stitches marking the length at the other end.

To make the buttonhole, use a thread of sufficient length to do both the overcasting and the buttonholing. Beginning at the lower right corner, overcast the raw edges with stitches one-sixteenth of an inch deep. Do not overcast around the ends of the hole. As soon as the overcasting is done, go right on with the buttonholing without breaking the thread. Hold the buttonhole horizontally over the first finger of the left hand and work from right to left. Insert the point of the needle through the buttonhole (at the back end), bringing the point through toward you four or five threads below the edge

of the buttonhole. Bring the doubled thread from the eye of the needle from right to left under and around the point of the needle, draw the needle through, forming a purling stitch. At the end of the buttonhole make a fan by placing from five to seven stitches. The thread should be fastened carefully on the under side of the buttonhole

PRELIMINARY PLAN.

For this lesson it will be desirable to have small pieces of muslin on hand to use as practice pieces for the buttonholes.

METHOD OF WORK.

The teacher should demonstrate the making of a buttonhole, illustrating each process on a large piece of canvas. The girls should sew two small strips of muslin together and cut a buttonhole one-fourth inch from the edge of the material, and lengthwise of the material, to work for practice. When the buttonhole has been sufficiently perfected on the practice piece, the girls should make a buttonhole on the band of the apron. The buttonhole should be made in the right end of the band, and in each end of each shoulder strap.

LESSON XIX. A PADDED HOLDER FOR HANDLING HOT DISHES. BINDING.

SUBJECT MATTER.

A holder 6 inches square will be satisfactory for handling hot dishes. It can be made of quilted padding bound with tape or of two thicknesses of outing flannel covered with percale or denim, and bound with tape or braid. If made of the outing flannel and covered, it should be quilted by stitching from the middle of one side to the middle of the opposite side in both directions in order to hold the outing flannel and the outside covering together. The tape that is to be used for the binding should be folded through the center lengthwise, then beginning at one corner of the padding the edge should be basted, half on one side and half on the other. Right-angled corners should be formed. When basted all around, the tape should be sewed down on each side with a hemming stitch.

If the holder is to be suspended from the apron band, a tape of from 27 inches to 36 inches in length should be attached to one corner. The raw edge at one end of the tape should be turned in. The end should be so placed that it overlaps the corner of the holder about one-half inch and should be basted to the holder. The tape should then be secured firmly to the holder, hemmed down one edge across the bottom, and up the other edge. The other end of the tape should be finished with a 2-inch loop. The raw edge should be folded over, the tape turned 2 inches down for the loop, and basted in place. This

should be hemmed across the end. One-fourth inch up from the end the double thickness of tape should be back-stitched together and the edges of the tape overhanded from there to the hemmed end.

PRELIMINARY PLAN.

Each girl should provide sufficient denim, percale, muslin, or other easily washable material to cover the two sides of a holder 7 inches square and enough outing flannel or canton flannel for a double lining. About $1\frac{1}{2}$ yards of straight tape one-half inch wide will be needed for the binding and to suspend the holder from the apron.

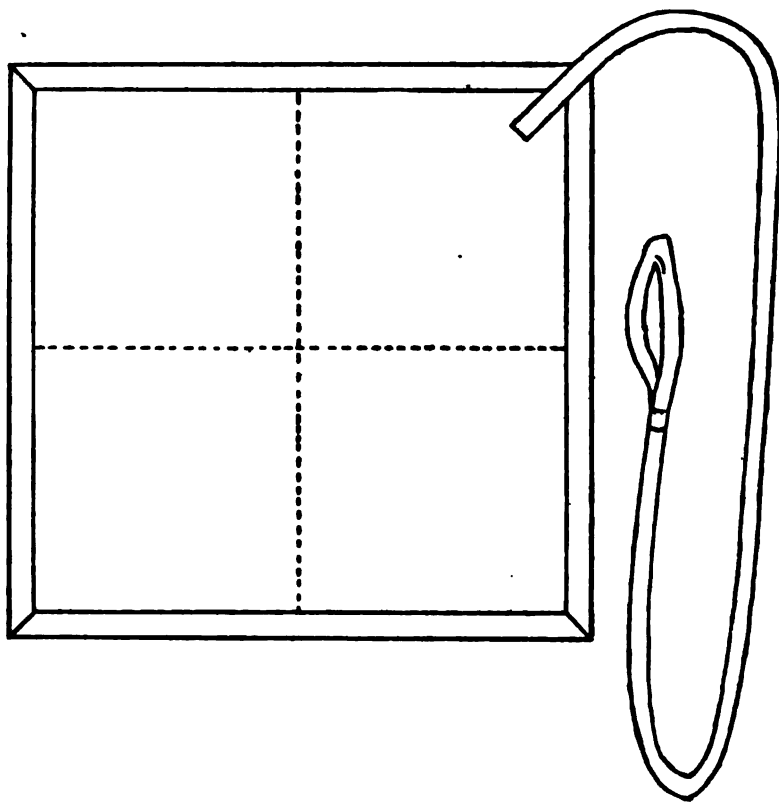


FIG. 20.—The holder.

METHOD OF WORK.

The girls should first carefully measure and turn the material for the covering of the holder and then prepare the lining, basting it all together, then putting in the running stitch and finishing with the binding.

If it is not possible to complete the holder in one period, a second lesson period should be provided, or arrangements made to have supervised work done out of lesson hours.

LESSON XX. A CAP TO WEAR WITH THE COOKING APRON.

SUBJECT MATTER.

The simplest cap to make will be the circular cap. A pattern should be made by drawing a circle 21 inches in diameter with a pencil and string on a piece of wrapping paper. The material for the cap should be cut carefully around the circle and finished with a narrow hem. A tape to hold the draw string should be placed 1½

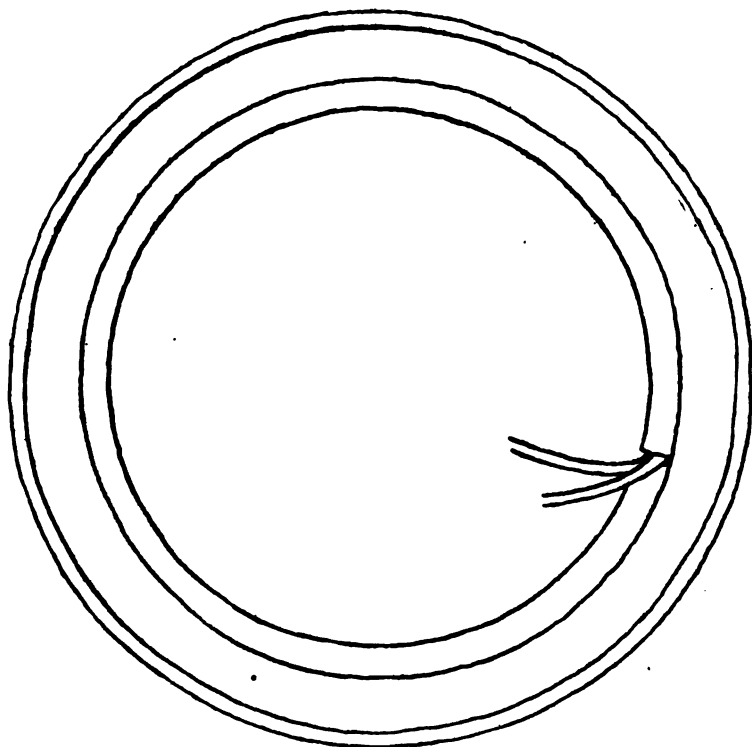


FIG. 21.—Cap.

inches inside the edge of the hem. A small piece of cardboard cut about one-half inch wide should be used for measuring the location of the tape. Bias strips three-fourths inch wide can be prepared for the tape, or a commercial tape three-eighths inch wide can be purchased. The outer edge of the tape should be basted down first, the edges joined, then the inner edges should be basted, keeping the edge smooth. Both edges should be neatly sewed down with hemming stitch by hand or on machine. An elastic should be inserted in the band, carefully fitted to the head, and ends fastened neatly.

PRELIMINARY PLAN.

This lesson will give good opportunity to make a cap that will answer for a dust cap or serve as a part of the cooking uniform. If such a cap does not seem desirable and the former lesson has not been completed, the cap can be omitted and the work on the holder continued.

METHOD OF WORK.

The girls should first make the pattern for the cap and then cut out their material. The hem should be basted and stitched with the hemming stitch. The bias strip should be basted on and sewed down with the running stitch. It will probably not be possible for the girls to complete the cap in one class period, but if the material has been cut out and the work started, they may be able to complete it at some other time. The stitches are not new and the work will serve as an excellent test of the skill they have acquired in the course.



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BULLETIN, 1917, No. 24

MONTHLY RECORD
OF CURRENT EDUCATIONAL
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DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

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MILITARY TRAINING
OF YOUTHS OF SCHOOL AGE IN FOREIGN COUNTRIES

By W. S. JESIEN
BUREAU OF EDUCATION



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LETTER OF TRANSMITTAL

DEPARTMENT OF THE INTERIOR,
BUREAU OF EDUCATION,
Washington, April 17, 1917.

SIR: To meet the demand for information as to what provision is made in the several countries of the world for military teaching for boys of school age, I have caused to be prepared the manuscript which is transmitted herewith and which I recommend for publication as a bulletin of the Bureau of Education.

Respectfully submitted.

P. P. CLAXTON,
Commissioner.

The SECRETARY OF THE INTERIOR.

MILITARY TRAINING OF YOUTHS OF SCHOOL AGE IN FOREIGN COUNTRIES.

INTRODUCTION.

The matter presented in this circular relates to the military training of youths of school age, conducted either as a part of the regular school work or by independent agencies. Military instruction, of the exact nature and to the same extent as that given to soldiers, is not found in the schools of any country of Europe except the special military schools. Such training is confined everywhere to the period of active service, and no attempt has ever been made to impose upon the school the task of producing fully trained soldiers. In many countries having universal military service the public schools provide for training boys in such elements of military science as may be conveniently combined with their physical training and at the same time prepare them for the active service awaiting every young man.

The attitude of foreign educators in the matter is well defined. They do not, as a rule, regard the military instruction as a successful substitute for the well-established systems of physical training and character building. They generally view it as an anomaly in the school system, justified only by the exigencies of national defense. The enthusiastic support they lend this work comes more from patriotic than from pedagogic motives. Occasionally, however, the beneficial effects of military training upon the moral and physical sides of boys' education are emphasized. Very marked results of this nature have been observed in Australia, which should have more than passing attention.

In France, where military training is a component part of the prescribed program of public primary schools, it is not approved by leading educators as a method of physical training, but it is recognized and commended as preparatory training for military service, intended to raise the efficiency of the French Army. The programs of public schools of France include gymnastics and moral instruction, the former as a means of building up the physique of the boys and the latter of developing their character; it is generally recognized that these two objects of education can not be perfectly attained by any system of military training.

On this subject one authority says:¹

Military training may present, as regards hygiene, serious inconveniences; it implies rigid discipline, which is condemned by true pedagogy. Outside of that it produces results that are only partial, limited, and special.

This opinion relates to military training regarded as a method of physical education. But by the same authority military instruction is termed "a work of urgent interest to the country and to all young citizens."

These quotations represent fairly the attitude of enlightened and patriotic French opinion.

An Austrian educator, Prof. E. Bausenwein, writes on the same subject as follows:²

Shooting practice in the Austrian secondary schools was not introduced as a matter of sport to which one may be devoted or not but as a serious necessity, the effects of which are rightly estimated as of great importance for the defense of the State in a time of trial.

Although each country possesses its own system of military training of school youths, adapted to the specific conditions and purposes of the movement in each particular instance, a certain similarity of origin and organization of these movements may be observed. In most cases the source of the movement can be traced to the department of war, assisted by the department of education and patriotic organizations of citizens. Where military instruction is not an obligatory part of the public school curricula, it is promoted in the form of student organizations under the leadership of patriotic clubs and aided by Government grants and by the lease of Government property. In those countries where the Governments are not directly active in this work it often arises spontaneously under the guise of semimilitary clubs.

It is also a significant feature of all militaristic movements affecting the schools that they appear wherever and whenever special need is felt for raising the standard of the military preparedness of the nation. In France the movement was started after the disastrous war of 1870 and revived after the reduction of the term of active service in 1905. In Austria intensive military work in schools was launched after a similar reduction of the term of service. In Switzerland and Australia it accompanied the introduction of an abbreviated system of universal military service. During the period from 1908 to 1914, when apprehension of the oncoming European conflict was keen among the nations of the Continent, the training of school youths in warlike exercises was greatly extended. In Germany, according to *Körperliche Erziehung*, schoolboys were attracted in this period to numerous civilian rifle clubs and semi-military organizations.

¹ *L'Annuaire de la Jeunesse*, 1914, p. 4.

² *Körperliche Erziehung*, June, 1912.

In a certain sense all work of a military nature performed by schoolboys, whether compulsory or voluntary, whether promoted by the State or by private agencies, and whether in the nature of extensive military training or of simple close order drill, is worthy of note in the present consideration. The differences that appear between the countries here treated are chiefly those of degree of universality and thoroughness of the training given. Australia and Switzerland have the best organized systems of preparatory military training; in both these countries this work is regarded as a part of the regular military training provided for the Army, the school simply relieving the military establishment of a part of its task and shortening thereby the term of training in the active service. In other countries, like Great Britain, the work appears in an unorganized, sporadic, and limited form, or in conjunction with training for other purposes. Between the two extremes represented by Switzerland and England there are several intermediate forms, such as (a) prescribed military drill, but in a limited extent, or (b) thorough military training, but conducted by outside agencies and therefore not obligatory, or (c) prescribed military training limited to certain kinds of schools, etc.

For a comparative view, a bare outline of the systems prevailing in various countries is given below. It will be seen that the list includes all the important countries for which information is at present available. This outline is followed by detailed statements for the several countries and a bibliography.

BRITISH EMPIRE.

England.—Strictly voluntary work carried on by private agencies.

Australia.—Military instruction compulsory for all boys from 12 to 18 years of age.

New Zealand.—Military instruction compulsory for boys over 14 years.

Canada.—Military instruction carried on in voluntary cadet corps.

FRANCE.

Prescribed military instruction without arms, and rifle practice in elementary and higher elementary schools. Ages 9 to 13 years; rifle practice limited to boys over 10 years of age. Specially trained instructors. Strong organizations carry on the work of military preparation among older boys.

GERMANY.

Voluntary organizations of older public-school pupils and students of secondary schools. Training *without arms*. Decrees issued during the war provide for preparatory military training of all boys over 16 years of age.

AUSTRIA-HUNGARY.

Austria.—Voluntary organizations for military training of pupils of secondary schools, under Government protectorate. Optional rifle practice in the last two years of secondary schools.

Hungary.—Military training obligatory in the last three years of certain gymnasia designated by the Government. Voluntary rifle clubs in secondary schools. Military drill in primary schools.

SWITZERLAND.

Instruction in military gymnastics in elementary schools obligatory throughout the school age. Conducted by specially trained instructors. Voluntary rifle practice and military drill both with and without arms.

SWEDEN.

Compulsory rifle practice in public secondary schools for boys from 15 to 18 years of age. Given by special instructors.

NORWAY.

Voluntary rifle practice.

ITALY.

Military training given as obligatory subject in "national colleges." Private agencies provide for simple military drill for younger boys.

SPAIN.

No distinct military training is given. Some simple drill is included in the program of physical training.

PORTUGAL.

No military training is given in schools. The subject of "physical culture," which is taught generally, includes simple drill without arms. Boy Scout organizations are numerous.

RUSSIA.

Prescribed military gymnastics in elementary and secondary schools.

NETHERLANDS.

Military training given in voluntary organizations for boys over 15 years of age.

GREECE.

Very intensive military instruction is given in gymnasia, under the patronage of the King. Simple drill obtains in all public schools in connection with physical training.

JAPAN.

Military gymnastics obligatory in elementary, secondary, and normal schools.

MEXICO.

Obligatory military drill with arms in all primary and secondary schools. Regulated by State laws.

ARGENTINA.

Obligatory military training in the last two years of secondary schools. Specially trained instructors.

BOLIVIA.

Simple drill in connection with gymnastics.

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BRITISH EMPIRE.

ENGLAND.

All the training of schoolboys in England of a military or semi-military character is conducted by outside agencies. The only attempt to introduce this training into the regular work of the schools was made in 1906, the date of Haldane's Territorial Forces Act. The bill included a provision for compulsory military drill in schools, but owing to determined opposition, both in Parliament and in the country, this provision of the bill was rejected.

The voluntary organizations enroll only a small proportion of the youths of England, but in a certain sense their importance is incommensurate with mere numbers. This is especially true in reference to the cadet corps, which have been in existence for over 55 years and have become part of the educational system of the country in almost the same degree as cricket and football teams. It was observed that a surprisingly large number of young men enlisted in Kitchener's army had previous military drill in cadet corps, which proved of great advantage in their hurried preparation for active service.

The organization of English cadet corps is well known; these bodies still continue to be a model for similar organizations in the United States. The cadet corps were first founded in 1860 and in the course of a few years spread rapidly throughout the country. A revival of the movement occurred in 1906, directly following the defeat of the provision for compulsory military training in schools, mentioned above. This revival was especially noticeable in secondary schools, where many new battalions were formed.

The European war stimulated a new interest in the matter. The question of compulsory military training in schools was again raised, and various suggestions were advanced as to the most expedient methods of organizing this work. No decisive steps, however, have been taken thus far.

In recent discussions of the subject the trend of opinion seems to be against cadet corps and in favor of organizations that entail less expense and, at the same time, are capable of attracting larger numbers of pupils. It is pointed out that the cost of uniforms, the difficulties connected with the selection of a proper kind of rifles, the want of officers, and other conditions prevailing in the cadet-corps

system tend to limit membership in the corps to an exclusive group of students. To overcome these difficulties nonuniformed corps have been organized. The boys drill with wooden dummy rifles under the command of teachers. For target practice small-caliber rifles are used. Infantry drill is conducted in accordance with the latest army regulations. The chief advantage of this system lies in the fact that *all* pupils of a given school participate in the work of the corps, and the drills form a part of the ordinary school program.

The first nonuniformed corps was established in 1881 at the Hackney Downs school and has been conducted with considerable success down to the present time.

Junior divisions of officers' training corps are organized in many schools. These courses correspond to similar courses of reserve officers' training corps in the United States. They have proved very useful during the war.

Among organizations not avowedly military, but devoted to exercises of a military or semimilitary character, the most popular in England are boys' brigades, church-lads' brigades, and boy scouts.

Boys' brigades were founded originally in Glasgow, in 1883, by W. A. Smith. The object of the brigades is to develop in the young generation a Christian manliness by means of physical training and discipline. The brigades exercise in military movements and gymnastics, participate in summer camps, and attend religious services and classes. The movement gradually spread to the English colonies and the United States; at present the estimated number of boys in the brigades in the English-speaking countries is over 100,000.

Church-lads' brigades are similar organizations confined to the Anglican communion.

The boy-scout movement, originated in 1908 by Maj. Gen. Baden-Powell, has been adopted by almost every civilized nation. Although the movement is nonmilitary, it is generally admitted that the qualities of character and mind developed in the boys by the scout system are those highly valued in military service and indispensable in at least one branch of that service, namely, scouting and patrolling.

AUSTRALIA.

The "Defense Acts" adopted in succession during the period from 1903 to 1914 form the basis of the military organization of the Commonwealth. The military instruction given in schools is part of the system of national defense and as such is fully provided for and regulated by the acts.

By the latest measures all male inhabitants of Australia who are British subjects and have resided in the Commonwealth for six months must serve in the citizen's army. The compulsion extends

over the entire period of training, which is divided into three cycles as follows:

- (a) From 12 to 14 years of age, in the junior cadets.
- (b) From 14 to 18 years of age, in the senior cadets.
- (c) From 18 to 26 years of age, in the citizen force.

Junior cadets.—Junior cadet training, lasting for two years, consists of 90 hours each year, and begins on the 1st of July in the year in which the boy reaches the age of 12 years. This period of training aims at developing the cadet's physique. It consists principally of physical training for at least 15 minutes each school day and elementary marching drill. The following subjects are also taught: Miniature rifle shooting; swimming; running exercises in organized games; first aid; and (in schools in naval training areas) mariners' compass and elementary signaling. The junior cadets are not organized as military bodies and do not wear uniform. The Commonwealth Government maintains a staff of special instructors of physical training, by whom classes are held for school-teachers in all districts of the Commonwealth in order to increase the science and proficiency of the latter in the military subjects they are to teach in their schools. The inspectors of schools supervise the training and inspect the cadets on behalf of the defense department.

Senior cadets.—Senior cadet training lasting for four years begins on the 1st of July of the year in which the boy reaches the age of 14 years. On entering this part of the course each cadet must present himself for registration and show that he has completed the necessary training in his thirteenth and fourteenth years. The senior cadet course consists of 40 drills each year, of which 4 are classed as whole days of not less than four hours, 12 as half days of not less than two hours, the remainder being night drills of not less than one hour. This allotment of time may be modified to meet special conditions, but the minimum efficient service required of senior cadets is invariably 64 hours per annum. Registration of every male born in 1894 and subsequently, and who has resided for six months in the Commonwealth, must be effected in the first two months of the calendar year in which he completes his fourteenth year.

The four years' work covers the foundation necessary for any arm of the service. It comprises marching, handling of arms, musketry, physical drill, first aid, guards and sentries, tactical training as a company in elementary field work, and elementary battalion drill. Discipline is strongly inculcated.

On the 1st of July of the year in which he completes his eighteenth year the cadet enters the period of adult service and is assigned to the arm of the service in accordance with his preference or special qualifications.

Enforcement of the compulsion.—The training, both in junior and senior cadets, is compulsory for all boys except aliens and non-Europeans. Theological students are exempt from training. In some sparsely populated districts the compulsion is not applied as rigidly as in other districts because of undue hardships that it would impose.

Employers, parents, and guardians may not, under a heavy penalty, prevent any employee, son, or ward who is in training from rendering service; penalties are also imposed upon cadets evading service. Penalties take the form of money fines or detention in military custody under enforced training and discipline. Evasion is also punished by ineligibility for any employment in the public service of the Commonwealth. Children's courts are used where possible for the prosecution of cadets under the age of 16 years.

While in training senior cadets and soldiers are required to satisfy certain requirements of efficiency and are tested every year. Those failing to pass in the annual test must do an extra year's training. Each senior cadet must pass four annual tests of efficiency.

Instructors.—Both cadets and enlisted men are trained by a military instructional staff consisting of Army officers and noncommissioned and warrant officers. This staff was organized immediately after the enactment of the law, and the officers and noncommissioned officers selected as instructors were put through a short course of special training.

Operation of the system.—A slight amount of opposition has been manifested to the system. This, however, was principally for personal or religious considerations. It is claimed that the scheme, both before its inception and since its successful inauguration, has had the support of leading statesmen of all political views, as well as the vast majority of the citizens of the Commonwealth. Much interest and willingness is shown on the part of the youths in training, which is evidenced by a great amount of voluntary work done, such as athletic, gymnastic, target practice, etc. A marked improvement has quite lately become apparent in the general conduct and bearing of the youths of Australia, and it is claimed that this is the effect of the system of universal training. As a result of inquiries made in 1914, the police authorities in all the States concurred in the opinion that the behavior of the youths who are subject to the training is vastly improved. It is stated that, both mentally and morally as well as physically, the benefits are very definite, and that the principal effects of a beneficial nature are increased self-respect, diminution of juvenile cigarette smoking, and "larrikinism," and generally a tendency toward a sense of responsibility and a desire to become good citizens.

In regard to opposition to the system, the percentage of prosecutions to number liable for training in 1914 was 5.38. This figure

includes all classes of cadet and active service; it also includes the parents, employers, and guardians.

Statistics.—In 1914 there were 87,000 senior cadets undergoing compulsory training and nearly 50,000 junior cadets were certified for physical training. The number of citizen soldiers in training was more than 51,000.

NEW ZEALAND.

The Defense Act of 1910-11 makes military training compulsory for every male New Zealander from the age of 14 years to the age of 25 years, after which he serves in the reserves up to the age of 30.

The first period, beginning when the boy reaches the age of 14, or completes the course of a primary school, is known as senior cadet age. The training given in this period is similar to that given in Australia, and consists of a system of military drills, rifle practice, etc. Senior cadets are part of the army organization in every respect, except that they are not liable to be called to arms.

On reaching the age of 18 years, if found physically fit, a cadet is drafted into the Territorial Force.

In 1914 there were 25,300 cadets in training in New Zealand.

In various reports on the effects of the cadet system, beneficial physical and moral results are invariably emphasized. Employers and other persons concerned remark upon the improvement of the cadets in their general conduct, physique, and sense of civil obligations.

CANADA.

Military training of youth of school age in Canada, while not embodied in any obligatory system, has attained a high measure of uniform development through the combined efforts of educational and military authorities, and of the Strathcona Trust, to which is committed a fund (\$500,000) given by Lord Strathcona for the promotion of physical culture, military training, and rifle practice in the schools of Canada. Local committees of the trust are established in the several Provinces, and the interest derived from the fund is distributed among them according to a fixed scheme.¹

In the majority of the Provinces physical training is a prescribed subject in all primary schools. Since this training includes, as a rule, simple military drill, it serves as a preparation for subsequent military services. Formal military training is given in voluntary cadet corps, which are organized in accordance with the official "Regulations for the Cadet Services of Canada, 1913," and subsequent amendments.

¹ See Rept. of Commis. of Educ., 1916, Vol. I, pp. 525-526.

The corps are classified as follows: (1) Those consisting of pupils in attendance at colleges and schools controlled by provincial government; (2) those composed of pupils in attendance at colleges and schools not under Government control; and (3) those composed of boys who, with the permission of their parents, prefer to join corps unconnected with educational establishments. The age limits for cadets are 12 to 18 years. Where a cadet corps is affiliated with an educational institution, a bona fide student who exceeds the regulation age may join the corps or continue to be a member, provided there is no militia unit affiliated with the institution which he might join. Instruction is given as far as possible by the ordinary schoolteachers, who must be fully qualified by attendance at a military school of instruction and holding a cadet instructor's certificate or its equivalent. The syllabus of instruction includes general physical training and military drill, semaphore signaling, and the use of arms (rifles and gallery-practice guns being supplied by the Government).

FRANCE.

The movement in favor of an extensive education of youth in military arts was started immediately following the war of 1870. In 1871 the minister of public instruction, Jules Simon, issued a circular to school principals advising them to devote special attention in their schools to physical training and instruction in the handling of arms. The law of January 21, 1880, made physical training, including military drill, obligatory in all public schools. The law was followed by a manual of gymnastics and military training in two volumes, edited by a special commission and issued by the ministry of public instruction. A circular issued by the minister in connection with the appearance of this textbook made an earnest appeal to school principals to give the matter of military training thorough consideration. The circular said:

You know the purpose of this training; you know what importance we ought to attach to it. To use the expression of the honorable author of the bill on physical training, "It is not simply a matter of health, of bodily vigor, of the physical education of French youth; it is equally a matter of the successful operation of our military laws, of the composition and strength of our army."

The military training prescribed by the law consisted of drill without arms, and shooting practice; the latter, however, was not introduced at once owing to delay on the part of the authorities in providing the rifles. In July, 1881, an appropriation of 1,000,000 francs for military training in schools enabled the Government to purchase 52,600 rifles. These rifles were adapted for target practice exclusively. In many localities, however, school authorities procured

rifles of the service pattern, but of lighter weight and constructed so they could not be fired; these were used for drills with arms. In Paris, and later in numerous places in the province, especially in eastern Departments, school cadet corps were organized soon after the promulgation of the new law. These organizations, called "bataillons scolaires," became very popular both with the students and the public.

In 1882 the battalions received official sanction and regulations, and military training was introduced as a distinct subject into the curricula of public schools.

The school battalions were composed of boys over 12 years of age, whose fitness for receiving military instruction had been attested by a commission consisting of two officers designated by military authorities and a school inspector. Each battalion was authorized by the local chief of police. The ministry furnished distinctive flags for the battalions that achieved satisfactory progress after the first year of existence. The instructors were designated and supplied by military authorities. Drill rifles used by the battalions were made so they could not be used for shooting. For target practice, which was limited to students over 14 years of age, small caliber rifles were used, and ammunition was distributed with the usual precautions. Uniforms were not obligatory, but most of the school battalions adopted uniforms patterned after those first introduced in Paris—short jackets, long, marine-blue trousers, and Scotch bonnets.

The life of the school battalions was short. The records of the ministry of public instruction show that the last flags were distributed in 1886, after which date the battalions were disbanded. Among the reasons given for the failure of these organizations are:¹

The deterioration of the spirit that animated the original promoters of this work, and the consequent meagerness of the results obtained; lack of public interest and support that became manifest as this change took place.

The idea that prompted the creation of the school battalions survived the crisis, however, and soon found expression in a more practical and more efficient form of "Union des sociétés d'instruction militaire de France," founded in 1890, which merged, in 1907, with the "Association nationale de préparation des jeunes gens au service militaire" to form the now celebrated organization "Union des sociétés de préparation militaire de France." The work of this organization is discussed below.

As regards the prescribed programs of military instruction in primary schools, the order of 1882 was replaced in 1887 by new regulations which limited the instruction to the middle and higher

¹ F. Buisson : Nouveau dictionnaire de pédagogie. Paris, 1911.

divisions of elementary schools, to be pursued according to the following outline:

Middle division.—Exercises in marching, alignment, formation of squads, etc. Preparation for military service.

Higher division.—School of the soldier without arms. Principles of the several steps. Alignments, marches, countermarches, and halts. Changing the direction.

According to latest advices (*Annuaire de la Jeunesse*, 1914) this program is still in effect.

In higher elementary schools the official programs comprise, in addition to gymnastics, the "preparatory military exercises" consisting in advanced drills and maneuvers.

An order of July 27, 1893, in force to date, added target practice to this program. The full text of this order is as follows:

In the middle course and the higher course of public primary schools the following addition is made to the program of military exercises, to wit: For pupils over 10 years of age exercises in shooting at 10 meters with Flobert rifles. (The name Flobert is given to several makes of small-bore guns, mostly .22 caliber.)

Since the enactment of this order two circulars have been issued by the minister of public instruction dated, respectively, June 27, 1903, and April 26, 1907, regulating the conduct of gun practice in the schools. The latter circular is especially interesting as an evidence of the zeal with which this work is promoted by the Government. This circular says:

The order of July 27, 1893, enacted by the superior council of public instruction, has introduced rifle practice into the programs of elementary schools.

Since the law of March 21, 1905 (reducing the term of service in the regular army to two years), was put into effect, the question of practical organization of that instruction in the schools has assumed an urgent character as never before. This question was the object of a new investigation by a commission composed of representatives of the departments of war and public instruction.

The commission has adopted a number of resolutions which I approved in accord with my colleague, the minister of war, and whose tenor is as follows:

1. The teachers are most urgently invited to give instruction in shooting at short distance in the schools; it is recommended in case where there is not yet an organization operating to their satisfaction, that they shall proceed to organize small school rifle clubs and to establish, in connection with these, continuation sections intended to secure the extension of the practice until the period of military service and even after, if practicable.

2. The work thus instituted will enjoy the rights and privileges attached to continuation military training, especially the supplementary leaves and remunerations, as provided for such cases.

3. The inspectors of primary schools shall report every year as to organization of target practice in the schools of their respective districts and communicate the names of teachers most distinguished in this respect; they shall, for the information of higher administration, indicate in their reports, if appropriate, the reasons why certain schools in their districts have not been able

to organize this instruction and what assistance could be offered them to help them achieve positive results.

4. The instructors must be invited to bring their schools to participation in the contests of primary schools, which are organized annually with my approval by the "Union des sociétés de tir de France."

5. The prefects shall be invited to indicate to city mayors the earnest desire of the Government to have target practice organized in schools of every commune; the prefects shall be also asked to direct, by a special circular to each Department, the attention of mayors to the necessity of their arranging conferences on the subject with the teachers and aiding the latter to the greatest extent possible. They shall be also invited to point out to their general councils the importance of their effective participation in this work.

6. The minister of war, who is authorized by the law to accord some teachers exemption from one of the two periods of service, has decided that these exemptions shall be granted by right to all teachers providing for instruction in shooting in their schools. He will address letters of recognition, with mention in the Official Bulletin, to teachers recommended to him as most distinguished in this work.

7. All rifle clubs formed in the public elementary schools and comprising a continuation course may enjoy the rights accorded by the Instructions of June 21, 1904, to mixed rifle clubs.

They shall apply in this connection to the general commander of the division, who will serve as an intermediary between them and the ministry of war.

The circular closes with practical suggestions relating to the organization of school rifle practice.

SOCIETIES OF MILITARY PREPARATION.

The numerous societies of military preparation are federated into "L'Union des sociétés de préparation militaire," composed of 52 departmental federations and committees, with a total number of 1,080 societies and 300,000 members. The union encourages the organization of new societies and offers them active and pecuniary assistance.

The activity of the societies has assumed a more definite form since the institution, by the law of April 8, 1903, of the so-called brevet d'aptitude militaire. The *brevet* is a certificate of preliminary military training conferring upon the bearer certain privileges relating to the period of active service. He is entitled to (1) a special term of service in advance of the date of conscription, (2) choice of the corps in which to serve, (3) special rights for promotion to the rank of corporal or "brigadier," (4) assignment to special services. The brevet d'aptitude militaire is obtained upon passage of an examination prescribed by the law already referred to. The examination may be taken either in advance of the date of conscription or during the service.

GERMANY.

Germany was the first nation to introduce universal military service. The system was initiated in Prussia in 1814 and was soon extended to the other German States, thus laying the foundation of Germany's military organization. Military training of schoolboys was early recognized as an important adjunct of the training of the troops. In 1808 the Prussian minister, Vom Stein, recommended the introduction of exercises in the use of arms in all city schools. Following this action several schools developed programs of military training of considerable efficiency. After the Napoleonic wars, however, the country entered upon a course of military preparedness for all males, which was carried out on a vast and thoroughgoing plan that made the assistance of the schoolmaster no longer needed or desired.

The matter of military training in schools was not again revived until shortly before the outbreak of the European war. The present status of this work is that of a series of emergency measures undertaken both within and outside the schools in order to speed the training of youths approaching the military age so that they may be placed in the trenches as early as practicable. There are, however, several organizations whose activities have been developing for some time and have indications of permanency. These societies are known under the collective name of Jugendwehren (juvenile military organizations). The most renowned is the Jugendwehr of Berlin, founded in 1896, which numbers 600 to 700 members. Jugendwehren do not limit their activities to schoolboys, although the great majority of members are pupils of various schools. The age limits for members are from 14 to 20 years.

The Jugendwehren arrange drills on Sundays in army barracks or vacant grounds. The training comprises exercises in different military services. The Berlin organization is composed of five companies and several separate troops, such as musicians, marine corps, sanitary corps, etc. Many young men who have had this training are given special credit for promotion in active service.

Jugendwehren are often organized in individual schools; membership is then limited to students of the particular school. Such organizations are especially numerous in gymnasia and "real schools."

Among the federations of Jugendwehren the strongest is the Blue-white-blue Union. It comprises 70 juvenile corps, companies, or battalions located mostly in the northern Provinces. There are also various local organizations and unions of organizations with different programs and forms of activities. Some of the unions, like the Blue-white-blues mentioned above, wear distinctive combinations of colors.

As a rule, Jugendwehren pursue military or semimilitary training *without arms*. They arrange long marches, field exercises, and maneuvers, as well as exercises in the activities of auxiliary corps of the army.

The Boy Scout movement has been adopted in Germany in a modified form under the name of Pfadfinder (pathfinders). This organization is of recent origin, but its attraction for boys has made its progress extremely rapid. In 1912 the federation of pathfinders in Germany had a membership of 24,000, with 600 field masters. Pathfinders are recruited among older pupils and graduates of public schools and students of secondary schools. The uniform is similar to that of the Boy Scouts; it consists of a soft hat, jacket, knee breeches, a soft shirt, and belt. The equipment varies according to the kind of work performed. When out for fieldwork, the boys carry trench spades and picks. They do not exercise with arms, but otherwise their activities are decidedly military. The training of a pathfinder includes camp life, with all the requirements of physical endurance, strength of character, and self-reliance that it imposes. Pathfinders learn how to cook their food, how to save lives in emergency, and how to offer first aid. They are taught to orient themselves in forests, to climb mountains, to trail imaginary smugglers or "enemy," etc. They observe a code of personal conduct of a practical nature, comprising numerous instructions relating to morals, hygiene, thrift, etc.

The pathfinders are federated into several State and provincial organizations, of which the Wehrkraft of Bavaria is the most powerful.

In 1911 a new organization for military training of youth was founded in Berlin by General Field Marshal von der Goltz. It is known under the name of Jungdeutschland (Young Germany), and its object is to prepare boys of school age for military duty by means of exercises of a direct military character. Army officers and sergeants act as instructors. The work done by the "Young Germans" comprises drills, gymnastics, bicycling, marching, field exercises, patrolling, small feats of military engineering, etc.

In 1914 a joint decree was issued by the Prussian ministries of war, ecclesiastical and educational affairs, and the interior, requiring that all boys over 16 years of age, not yet in active service, should receive preparatory military training. The measure was to remain in force for the duration of the war. The training provided by the decree is voluntary, but a sort of moral compulsion is applied to the negligent. The communal authorities were charged with the organization of this work. Owing to the disorganization of schools, the measure could not be carried out on a uniform plan. In many localities military instruction is given within the school hours as a

part of the prescribed program. The average time allotted to this work is two hours per week; it is generally combined with gymnastics, and does not comprise exercises with arms. Other German States have made similar provisions. In Bavaria military training of youth is conducted on an extensive scale by private societies, with encouragement and assistance of the State government. The Bavarian "Wehrkraftverein," the most important organization for preparatory military training in the Kingdom, made public the program of instruction given to boys over 16 years of age, both in and outside the schools. This program gives an instructive evidence of the thoroughness and efficiency of the training offered in Wehrkraft's units. The full program is given in Appendix I.

AUSTRIA-HUNGARY.

AUSTRIA.

Military instruction is pursued in secondary schools by voluntary organizations of students. These organizations form a national federation, *K. K. Reichsbund der Knabenhorte und Jugendwehren*, with headquarters in Vienna. The federation was founded in 1908. In 1913 the number of federated organizations was 776 with 36,673 members. The funds of the federation amounted, at the same time, to 58,010 crowns. The federation is supported by the Government and was under the patronage of the present Austrian Emperor before his accession to the throne.

An order of the ministry of worship and public instruction, issued in October, 1910, introduced optional rifle practice in secondary schools. This instruction is offered to students of the last two classes of gymnasias and similar schools, and is given by specially trained instructors and army officers. The classes are in session two hours per week, exclusive of holidays and vacations, but not less than 50 hours in a year. The instruction consists of (a) theoretical instruction and preliminary exercises, (b) blank firing, (c) rifle practice with ball cartridges, shooting connected with theoretical instruction, marksmanship matches, and (d) estimation of distance.

Rifle practice takes place in school playgrounds, or on military grounds by arrangement with military authorities; the military furnishes all necessary material. Army rifles and ammunition are used, although for preliminary practice special gallery-practice cartridges are furnished, charged with percussion caps only. Students of secondary schools manifest great interest in this work, and in 1912 (according to *Körperliche Erziehung*, No. 6, 1912) from 70 to 80 per cent of qualified pupils in many schools participated in the shooting classes.

HUNGARY.

Military training preparatory to active service is promoted in Hungary by an organization called "Nationale Phalanx." The boys organized in the phalanx receive general military instruction and practice shooting with army rifles. Special attention is paid to the physical development of the youth. The organization is intended for boys who have graduated from public elementary schools. Besides giving military and gymnastic instruction, it also endeavors to awaken in the boys a patriotic spirit, to raise the level of their moral interests, and to promote national games and songs. In order to popularize its work, the phalanx arranges every year in each district or parish a public competition in games and military exercises.

In secondary schools military instruction has assumed a more formal development. In the school year 1905-6 a *reformed obergymnasium* at Zilah petitioned the ministry of national defense (Honved-ministerium) to furnish teachers, rifles, ammunition, and equipment for a course in military instruction organized in the institution. This request was complied with. The course established in the Zilah obergymnasium was for students of the four higher classes, and instruction was given on Sunday afternoons and vacation days. The example of Zilah was followed by several other gymnasia. The Catholic Church administration of the Siebenburg district introduced military training of this kind as an obligatory subject in eight secondary schools under its control. In other schools student societies took the initiative and began to drill and practice in target shooting. The military authorities promptly and willingly lent their assistance to every organization or school applying for instructors, arms, and ammunition.

In 1915 a decree of the minister of education made military instruction obligatory in the last three years of certain gymnasia recognized as situated opportunely for the conduct of such instruction. In the institutions designated only those students are excepted from military training who are recognized as unfit by a school physician or the school authorities.

For the purpose of military drill students are organized in companies of 60 men each. Both regular teachers of gymnastics and army officers (of the reserve force) are employed as instructors. The military instruction partly occupies the time formerly allotted to physical training and partly covers the hours of recreations and games. For field exercises are assigned two entire days and three half days in each school year. The instruction is theoretical and practical and comprises the regular military subjects, except rifle practice, which is pursued by voluntary clubs of students.

In 1903 Herr Von Szemere, a representative in the Hungarian Parliament, founded the first students' rifle club as a subdivision

of the university athletic club of Budapest. This action was indorsed by the ministry of national defense and an able officer was assigned as an instructor. At the end of 1912 the number of juvenile rifle clubs in Hungary had grown to 183, with a membership of 7,836. Of this number 5,243 were students of secondary schools. As the total number of students in the last two classes of secondary schools was at that time 9,878, fully 53 per cent of students participated in rifle clubs.

As regards the pupils of public elementary schools, a sort of military training had been given them long before the movement affected the higher classes of schools.

In 1906-7¹ military training was given in 150 elementary schools. The programs of this instruction are said to be very practical and efficient. Special attention is given to estimating distance, the pupils being trained to formulate at sight the distance of different points indicated by the teacher. The skill thus achieved is of great importance in long-range shooting; at the same time the exercise serves to improve the vision of the pupils overfatigued by study.

SWITZERLAND.

Military training in public schools of Switzerland is in the nature of preparation for the soldier's training received later in the active army by every able-bodied male citizen. The system of universal military service of the Swiss Republic provides only for a short period of training, on the assumption that every recruit has received the necessary preparation in his public-school course; therefore, this "preparatory gymnastics," as it is termed, is regarded as of utmost importance for the proper operation of the Swiss military law; in fact, it is an integral part of the military system. The act of April 12, 1907, forming the basis of the Swiss system of citizens' army, gives the main lines of the training required in the schools, in the following articles:

ACT FOR MILITARY ORGANIZATION OF THE SWISS REPUBLIC.

PART III. INSTRUCTION OF THE ARMY.

1. Preparatory Instruction.

ARTICLE 102. The Cantons provide for a course in callisthenics for young men during their school courses. This callisthenic exercise is administered by instructors trained for the work in normal schools and in the schools for physical training masters instituted by the Confederation. The Confederation exercises ultimate surveillance over these provisions.

¹ No later figures are available.

ART. 103. The Confederation encourages all associations and, in general, all efforts toward the bodily development of its young men from the time of their leaving school until incorporated in the army.

A physical examination takes place at the time of enlistment.

The Confederation imposes restrictions upon the preparatory physical instruction. It organizes the schools for monitors.

ART. 104. The Confederation similarly grants subsidies to associations and, in general, for all attempts having as object the military instruction of its young men before the age of military service. The Confederation sees that instruction in firing is made of primary importance, and gratuitously furnishes arms, ammunition, and equipment. The Federal Council fixes the necessary regulations.

As now in operation, the preliminary military training is conducted in two forms: (a) Compulsory "preparatory gymnastics" given in public schools as a part of official programs, and (b) voluntary drill and rifle shooting given outside the school, in cadet corps organized in accordance with article 104 of the act of 1907.

Preparatory gymnastics.—Regular attendance at the classes of preparatory gymnastics is obligatory for boys during the entire legal school age; children can be excused from taking this instruction only by special permit of the war department. This subject is taught by specially trained instructors, and is given a minimum of two hours per week in every school year.

The course is divided into three parts comprising, respectively, the ages: (1) From the entrance to and including 9 years of age, (2) from 10 to 12 years, and (3) from 13 years to the end of the school period. In the first part instruction consists mainly of games and free exercises. The last two parts embody the regulations of "physical training schools for preparatory military instruction" for which special manuals have been prepared by the Federal authorities.

A detailed program of the instruction comprised in each part of the course is given in Appendix II.

Voluntary cadet corps.—The voluntary cadet corps are organized in three groups, according to the kind of training pursued; there are corps for drill with arms, without arms, and for target practice. The Federal Government encourages the establishment of new corps and the development of those existing by an untiring activity in the form of circulars to teachers, prizes and subsidies to students, issue of rifles and ammunition, etc. As the ultimate aim of this work is to attract every boy to some sort of preparatory military training, special emphasis is placed on the complete representation of every school in the enrollment; for this purpose the cooperation of the teachers is solicited by the Federal Government.

Instruction in the cadet corps is given by army officers. Members of each corps wear distinctive uniforms. For target practice the Federal Government furnishes light rifles and ammunition. To en-

courage this practice a prize of 5 francs is given to each cadet who comes up to a certain standard of proficiency in marksmanship.

The growth of the cadet corps since the enactment of the military law of 1907 has been steady, and the interest of the boys in this work is such that practically every Swiss school boy is enrolled in some voluntary cadet corps.

The establishment of the "Cours des jeunes tireurs," corps specially devoted to target practice, was at once attended with great success. The enrollment in these corps in 1910 was 1,141; in 1912 it increased to 2,397.

The drill corps have likewise made considerable progress. From a membership of 10,950 in 1908 they increased during the four years ending with 1912 to 12,821 drilling with arms and 8,744 drilling without arms, or a total of 21,565.

SWEDEN.¹

Compulsory military training was introduced into Swedish schools about 50 years ago, in connection with the rifle-volunteer movement which at that time began to make progress. About 10 years ago the military exercises were altered to rifle practice, i. e., the training concentrated more upon shooting than upon ordinary military drill. Rifle practice is not given in elementary schools, excepting those in Stockholm. It is compulsory, however, in all public secondary schools (die deutschen Gymnasien), the age limits of training being 15 to 18. In Sweden there are only a few private secondary schools, and in some but not all of these instruction in rifle practice is given. Moreover, it is given in technical schools of secondary type and in training schools for teachers. Military training forms a part of the ordinary course of secondary education; consequently the Government appropriates a sum of 50,000 Swedish crowns annually to supply rifles, ammunition, ranges, etc.

The boys devote 60 hours yearly to rifle practice, the time being distributed over the first 15 week days of every school year during the last four years of the course (i. e., from 15 to 18 years of age, inclusive). Four hours each day on these prescribed days are spent in military exercises, the remainder of the day being occupied with ordinary school work.

Instruction is given by special instructors appointed by the secretary of state for war. In general, they are the teachers of gymnastics of the respective schools. These instructors are in most cases

¹ A. B. Wood: *The Military Training of Youth in Schools*. A report, based on official information, read before the Section of Educational Science of the British Association, at Manchester, Sept. 9, 1915.

men on the active-service list. A Swedish authority considers that the training has produced an undisputed beneficial effect on the boys, and has made them well fitted for their subsequent military training in the Swedish Army.

NORWAY.

Military training in the form of what might be called professional drill is not given in Norwegian schools. Although rifle practice is not compulsory, it is promoted by voluntary courses and is extremely popular with the youth of Norway. It is also encouraged in the schools by large Government grants.

ITALY.¹

In Italy, outside of the special military schools, military training as such is given only in what are called "national colleges." These institutions are controlled and subsidized by the Government. In scope they correspond to the gymnasia, but are all boarding schools; the students wear uniforms and are under discipline all the time. Twice or three times a week they are obliged to attend military drills comprising exercises with and without arms and rifle shooting.

As regards other schools, no military training is prescribed, but various military and semimilitary clubs have numerous followers among the school boys. The most popular of these are the *Ricreatori*, organizations arranging Sunday recreations in the form of gymnastic exercises, marches, drills, etc. Members of these organizations wear uniforms and usually have a brass band accompanying them in public exhibitions.

RUSSIA.

Military drill is given as an optional subject under the name of gymnastics in all primary and secondary schools for boys. The instruction consists of marches and various military formations, setting-up exercises, and some elements of physical training. The training is given by army officers or noncommissioned officers. Most secondary schools have their own brass bands. All students of public schools wear distinctive uniforms of military pattern, which, however, have no relation to military education.

An attempt to introduce gun practice in the gymnasia was made in 1915, according to press advices, but no recent official reports confirm this information.

¹ Statement by Baron Pietro Arone di Valentino, first secretary of the Italian Embassy, Washington, D. C.

.NETHERLANDS.

The work of military training of school youths is carried on in Holland entirely outside the schools by societies specially organized for this purpose. The most popular form of this activity is that of summer camps. The camps are organized for schoolboys over 15 years of age and are of 14 days' duration. This time is devoted by the boys entirely to physical and military exercises, swimming, and games. Target shooting and field-service drill are regularly practiced in the camps. The authorities provide for this purpose, without cost, instructors and physicians, as well as arms, ammunition, tents, blankets, and all other supplies that may be required.

Summer camp societies occasionally make arrangements for the boys in the summer camps for long excursions, either walking or bicycling.

Two organizations similar to Boy Scouts have recently developed in Netherlands. They are "Padvindere" (pathfinders) and "De Jonge Verkenner."

GREECE.¹

Military gymnastics and rifle shooting have been recently much encouraged in the secondary schools of Greece. In 1911 rifle practice was prescribed for the students of gymnasia, institutions with a four-year course, corresponding to the American high schools. Instruction in shooting is given twice a week. Every year inter-collegiate matches in target shooting are held in the larger cities. These matches are known as Σωτήρια (salvation), commemorating the failure of an attack upon the life of the late King. In Athens, where such contests are attended with much festivity, the King personally distributes the trophies.

Other annual games take place in various centers at Easter. In these games teams of pupils representing different primary schools compete in physical exercises and military movements. The best teams are awarded diplomas or trophies.

Physical training is given in all primary schools, and comprises, as a rule, simple military drill.

The Boy Scout movement is also rapidly gaining in popularity among schoolboys in Greece; it must be observed, however, that Greek Boy Scouts have strictly military organization, and the work done by them is in the nature of true military training.

¹ Statement by M. A. Vouros, Greek chargé d'affaires ad interim, Washington, D. C.

JAPAN.

Military training has a firm position in the Japanese school system, owing partly to the tradition assigning to military arts a prominent function in the education of boys, and partly to the modern development of military power in the nation.

In public schools military instruction is given in connection with gymnastics, but by separate teachers, mostly retired officers and noncommissioned officers.

Gymnastics and military instruction are taught in every school, the time allotted to these subjects varying from three to six hours per week.

The extent of military instruction in the several kinds of schools is shown in the following excerpts from official programs:

Elementary schools.—Military drill is obligatory for boys above 5 years of age. In the higher section of the course the drill consists of individual and section exercises.

Middle schools.—Military gymnastics is given throughout the course. It consists of horizontal-bar, shelf, wooden-horse, and parallel-bar exercises. Military drill consists of individual, section, and company drills, blank firing, and mimic fighting. Fencing and Jujitsu are optional.

In *higher schools, special colleges, and technical schools* of all grades gymnastics, including military drill, still forms an important part of the curriculum. In medical colleges military drill is practiced in the first year only.

MEXICO.¹

Military training has been practiced in Mexican schools for over 25 years. As early as 1889 a national congress of teachers adopted a recommendation to State governments urging the introduction of military training in every school in the country. This recommendation was later acted upon by the legislative powers of the several States, with the result that military instruction was introduced in every Mexican school where competent instructors could be secured. A recent decree issued by First Chief Carranza gave added sanction and new stimulus to this work.

The regulations generally adopted provide as follows:

In elementary schools military training commences with the third grade, at the average age of 10 years. Regular classes are held twice a week, half an hour each; once every week there is drill in larger bodies, for which students of several schools are brought together.

In the third grade the training consists of free exercises and simple drill in individual movements. In the fourth grade pupils

¹ Statement by Prof. Gregorio Torres Quintero, chief of the department of education, State of Yucatan, Mexico.

receive wooden dummy rifles and are trained in exercises with arms up to and including the battalion formation.

The supply of competent instructors is secured by means of the thorough military training given in normal schools. Later, while pursuing their vocation, teachers are given the benefit of frequent conferences with Army officers in order that they may keep their military instruction up to date.

The course of public elementary schools in Mexico covers four years. For continuation study there are higher primary schools with a two-year course. These include an advanced course of military training in which much attention is given to rifle practice. For target work the students use service rifles of Mauser pattern and full-charge ammunition.

This work is continued in high schools, where target practice and drill with arms are pursued on a more extended scale.

ARGENTINA.¹

Military training is obligatory in the last two years of public secondary schools, including national colleges, superior schools of commerce, superior industrial schools, and normal schools for teachers. The course of the secondary and normal schools covers from five to six years, the entrance age being from 14 to 16 years. Hence the students do not begin their military training until they are at least 17 years old. Private schools of corresponding grades have similar programs of military instruction.

The military training required in the last two years of the secondary school course is very thorough. It consists of drill with and without arms and rifle shooting, and occupies five hours per week. The instructors employed in this work receive careful training in a special institution called Escuela normal de educacion fisica. They must be graduated teachers, besides being experts in physical education. The army instructors employed are also graduates of special training schools.

Special attention is paid to target practice, for which purpose the Government furnishes service rifles (Mauser carbine, Argentine model) and ammunition. Both indoor and outdoor ranges are used. Target shooting is often done in teams representing various schools, which tends to stimulate the zeal of the students in this work. Those who have established a perfect record in marksmanship receive special credit in the form of one year's exemption from active service.

¹ Statement by Mr. Rómulo S. Naón, ambassador of Argentina to the United States, late minister of public instruction of Argentina.

BOLIVIA.¹

Military training in the strict sense of the term is not a feature of the schools of Bolivia, but some exercises in simple military movements are included in the physical training which is given, as a rule, in elementary and secondary schools.

The Boy Scout movement has developed recently to a great extent, the organization following the same lines as in England or the United States. Special importance is attached to long excursions, in which the boys march in troops to distant points for the purpose of rendezvous with other units or simply for the mental and physical benefit derived from such excursions. The physical strength thus developed is indicated by the fact that the distance covered in a single excursion often exceeds 70 or 80 miles.

¹ Statement by Señor Don Ignacio Calderon, envoy extraordinary and minister plenipotentiary of Bolivia to the United States.

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APPENDIX I.

PROGRAM OF PREPARATORY MILITARY TRAINING IN BAVARIA.

1. Quick, silent movements in line and column, either at halt or at marching in a given direction.

Division of the school into platoons and squads, carried out as in company drill.

2. The formation of a skirmish line and quick, silent assembling. When assembling the men are required to take proper alignment and intervals without command.

3. Simple marchings in column with change of direction on command and signals.

4. Exercises in marching in accordance with hygienic instructions. Regulation of step length and cadence. Long, easy step must be insisted upon.

5. Terrain exercises and singing national songs may take place during the march.

5a. Simple exercises in security services on the march.

6. Formation of a skirmish line and its movement in conformity with a given terrain; these exercises should be occasionally interrupted by assembling in order to secure quick response to command.

7. Every movement of juvenile units should be smart and cheerful without, however, affecting the accuracy of the drill. Immediate and accurate execution of all commands, orders, and signals of the commanding officer is an absolute requirement.

8. Elements of knowledge of terrain, its importance and utilization in combat, connected with data relative to modern fire efficacy.

9. Description of terrain, with short, exact specifications of small objects, preliminary to the practice in examination and description of the target.

10. Visual exercises of various kinds.

11. Distance estimating.

12. Prompt naming and discerning of similar objects.

13. Mnemonic exercises with the view of preparing the pupils for reporting orally their observations.

14. Hearing exercises.

15. Making correct conclusions from observation of terrain.

16. Accurate and true reporting upon observations made; also reporting service generally.

17. Correct repetition of short orders.

18. Exact orienting of others in a terrain.

19. The use of the watch, compass, distance measuring apparatus, and the knowledge of Morse code.

20. The use of maps. More attention must be given, however, to the development of sight and hearing.

21. Flag signaling.

22. Field gymnastics.

23. Small emergency works: Tying knots, recovery of floating objects, use of rafts, making emergency boats, building log bridges, crossings of various kinds, construction of tents, cabins, dugout fireplaces, kindling a fire and cooking, camp works.

24. Emergency stretcher. First aid to wounded.

25. The utilization of terrain for cover and for approaching the enemy.

26. Position and digging-in of a skirmish line.

27. Quick movements from cover to cover, both in advance and retreat.

28. Instruction in mutual assistance.

29. Advance guard service; how to place the advance guard detachments, etc.

30. In all of the above exercises every opportunity must be used to employ the youths in independent errands in the services of orderlies, in transportation, relay, and scouting, in order to develop their resourcefulness, dependability, and trustworthiness.

31. All means must be used to train the youths in endurance and strong will. No task once undertaken should be given up. Every one must fulfill his duty to the end.

32. Purely physical training in free exercises, gymnastics, running, games, etc. These should be short but given frequently.

33. Theoretical instruction in evening hours and in bad weather.

APPENDIX II.

PROGRAM OF PREPARATORY MILITARY TRAINING IN SWITZERLAND.

PART 1.

First year (7 to 8 years).—Drill (position and alignment). Facing by jumps, individually. Simple arm and leg exercises. Marking time, marching in circle and serpentine; marching with songs. Equilibrium on a bench. Preparation for a jump. Simple games. Breathing exercises.

Second year (8 to 9 years).—Drill (fall in and fall out). Position in double ranks. Simple arm and leg exercises. Exercises preparatory to gymnastics with apparatus. Quick-time marching, countermarching, half-step and tip-toe marching. Exercises in equilibrium. Simple jumps. Games. Breathing exercises.

Third year (9 to 10 years).—Drill in close-order formation (formation of a column, opening and closing the ranks). Arm, leg, head, and trunk exercises. Change of step in marching; double-time. Simple exercises with apparatus. Various jumps. Games. Breathing exercises.

PART 2.

Fourth year (10 to 11 years).—Drill in close-order formation (turning individually and by elements). Combined exercises, arms and legs, head and trunk. Suspension exercises (wall, ladder, horizontal bar, and climbing pole). Marchings in various steps and in double-time. Exercises of support (beam and parallel bars). Various jumps. Games and swimming. Breathing exercises. (Official manual, first year.)

Fifth year (11 to 12 years).—Review of close-order drill of the preceding year. Simultaneous exercises of arms and legs, arms, and trunk. Various marchings. Gymnastics with apparatus. Various jumps. Games and swimming. Breathing exercises. (Official manual, second year.)

PART 3.

Sixth year (12 to 13 years).—Drill in close-order formation (taking distances and intervals). Free exercises with canes putting in action different parts of the body. Various marchings. Gymnastics with apparatus. Exercises in equilibrium. Various jumps; jumps with obstacles. Games and swimming. Breathing exercises. (Official manual, third year.)

Seventh year (13 to 14 years).—Drill in close-order formation. Free exercises and exercises with canes. Gymnastic with apparatus. Oblique marchings, marchings by squads, platoons, etc. Various jumps, with obstacles, etc. Games and swimming. Breathing exercises. (Official manual, fourth year.)



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GARDEN CLUBS IN THE SCHOOLS OF
ENGLEWOOD, NEW JERSEY

BY

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GARDEN CLUBS IN THE SCHOOLS OF ENGLEWOOD, NEW JERSEY.

AUSPICES.

The garden clubs of the Englewood schools were organized during the summer of 1916 and were directed by the local board of education and the superintendent of schools through a supervisor of gardens employed for this special purpose. Owing to the experimental nature of the work and the lack of funds at the command of the board of education, the enterprise was financed in part by the Civic Association of Englewood and in part by the State of New Jersey, under the provisions of its manual training laws. In July, 1917,



PART OF THE SPRING TRIALS FOR A STEADY JOB.

however, that part of the expense hitherto met by the Civic Association was assumed by the board of education.

PHYSICAL AND SOCIAL ENVIRONMENT.

Englewood is a suburban residential city of about 12,000 inhabitants. In its vacant lots and back yards it has an abundance of land suitable for gardening. Much of the city lies in the desirable sandy loam soils of northern New Jersey. It is not a locality without obstacles, however. A considerable part of the inhabited area is on the swampy lowlands at the head of the New Jersey salt meadows,

and another section is on the rough western slope of the Hudson River palisades, where suitable locations are difficult to find.

Many of the children's homes are dingy quarters in crowded



THE GARDEN IN MID-SEASON.

tenements throughout a limited congested district in the low-lying area, so that the contact with nature afforded by the garden work is wonderfully inspiring; and it is especially gratifying to the interested



"WHAT HAS EATEN INTO THE HEART OF MY CORN STALK?"

adults. For instance, one high-school boy, who in the spring of 1916 planned great things, said that he had no place for a garden but suggested carrying a little earth to the roof of the tenement

in which he lived. He is now operating a garden of 3 acres in partnership with two other boys. What a little garden work will do for a boy is also brought out by another member of the same partnership. He is the only one of the three who has the good fortune to live in a house surrounded by a yard. In the spring of 1916 this boy displayed his lack of knowledge concerning the out-of-door world by saying, "Last year I planted some seeds about a foot in the ground, and I don't see why they didn't come up, because I sure did plant them good and deep." The fact that he has undertaken a task as large as the present one is in itself proof of what he has gained.

Aside from the common-sense information concerning the out of doors derived from such an enterprise as these boys are undertaking, the business training secured by planning, managing, selling the products, and recording the results of their work is of signifi-



MANY TIMES A QUESTION ANSWERED ALONG THE STREET HAS IMPORTANT RESULTS.

cant value to all the children, very rich and very poor, and of perplexing racial differences such as are found in the suburbs of a great city. All kinds of business, from the most gigantic commercial and banking undertakings known to New York City to the most limited second-hand dealing and pawn brokerage, will be the life work of these boys, sons of men who are at present engaged in such occupations.

As in all other public-school activities, equality of opportunity is especially marked in the garden club groups. The home life, as well as the school life, of each member becomes familiar to the others of the group, with its undeniable influence in bettering that of all the members. In this association, it is almost impossible for any member to overlook the sterling qualities in his club mates. Community

of effort teaches helpfulness and cooperation, not by theoretical expression, but by vitalized experience. The boys from the rich homes and from the poor find much in common.

ORGANIZATION.

Registration.—When the proper time came the superintendent of schools briefly explained the undertaking to all the children of each school in a general assembly. The supervisor then gave some further instructions and distributed registration blanks.¹ These were taken home by all the children electing the work, filled out, and returned the next day. At this time the supervisor of gardens went over the slips with the principal of the school, whose approval every participant was required to have. If the blank was not satisfac-



A GROUP OF GIRLS LEARNING HOW TO SPADE.

torily filled out, but the child approved, the parents were visited by the supervisor and the blank corrected. Each child who was thus registered then took complete charge of his project, which he was expected to carry out with the supervision and advice of his parents and of the supervisor of gardens. The project, aside from caring for a garden, included the maintenance of a careful record¹ of all activities connected with it.

The records of the children.—This record when complete contains certificates of recommendation and approval; personal information concerning the child; a photograph of the child in his garden; a working plan of the garden drawn to scale; an itemized and summarized financial account; a record of marks given the garden by the instructor on visits to the garden; and a story of the season's work in essay form.

¹ See section on "Blanks and Circulars" (p. 29) for this record blank.

Division of pupils.—All the children undertaking the work were organized into clubs of about 15 members each, of about the same age, of the same sex, and from the same school. By this plan all the homes of the children in each club were close enough so that each member could see what the others were doing. Each club was organized and conducted by the children under the direction of the supervisor. The clubs were merely a division of the children for convenience in supervision and instruction.

A competition.—The members of each club competed among themselves for inexpensive prizes. The children were to have been marked on the basis of 100 per cent as perfect, with one-third of the credit coming from their garden, one-third from their records, and one-third from the showing which they made at the exhibit. This



ANOTHER GROUP IN THE SAME YARD RAKING THEIR PRACTICE PLAT.

method of calculation had to be abandoned on account of the board of health ruling, however, and instead, three-fourths credit was given on the garden and one-fourth on the record. The premiums awarded on this basis were buttons from a progressive series designed to be awarded for achievement. The same series is used in the boys' and girls' clubs of the United States Department of Agriculture. From each club the contestant having the highest average was given one of the first buttons of the series made of rolled gold. The contestant having the second highest average was given one of the same buttons made of sterling silver. All the other members having an average of 75 per cent or above received a bronze button of the same design. The competitor who had the highest average of all the pupils of all the clubs received one of the second buttons of the series made of solid gold. The same series of buttons will be used progressively in the future.

Just as the individual members strove for excellence among themselves, so did the clubs and the schools. The school having the highest average among the garden club members attending it was given a banner. This banner is the first in a series designed with a similar idea as that carried out in the buttons awarded to the individual prize winners.

This plan of premium awards always leaves something open to be achieved. It is inexpensive and makes possible the awarding of many merits. This in turn gives every child an ample chance to start toward the final goal. If a pupil does good work but does not stand first, he is given something to show for his efforts and something as a basis to work on in the future.

Meeting places.—The meeting place of each club gathering was determined by the object of the special meeting. The preliminary



ONE WAY OF COVERING SEED.

planning and ordering of seeds was done in the schoolhouse. Demonstrations in garden preparation, seed sowing, and cultural methods were held in back yards and vacant lots. Street corners were used as meeting places for starting trips to the surrounding commercial trucking region. Two of the older groups met in one of the school yards several times to aid in the construction of hot beds and receive instructions for building them.

INSTRUCTION.

The methods of instruction varied in accordance with the season. During the late winter and early spring the classroom method was followed. Necessarily the work done at this time was varied. Some of the time was spent in talking over the different garden practices

and methods, some in seed-testing demonstrations, and some in drawing plans and working out schemes for the summer's work.

Just as soon as the ground could be worked demonstrations were held to illustrate the problems which would be met by the children when they started to work their gardens. With the least experienced children, and there were many with no experience, the most difficult task was to teach them how to handle garden tools. The handling of tools combined with their many uses comprised a problem difficult to the small beginners.

Along with the classroom work and demonstrations, postcards and circulars of different kinds were found valuable. Several short leaflets on timely subjects were written and distributed by the supervisor. Publications of experiment stations, and one of a seed firm, were also used.



ALL SEEDS PLANTED ARE CAREFULLY LABELED.

A still broader view of vegetable gardening and agriculture in general was afforded the children through automobile trips into the rural districts. Englewood lies near some of the best vegetable, fruit, poultry, dairy, and general farms of New Jersey. Many of these were visited. The trips proved to be greatly enjoyable and inspiring, as well as instructive to the children.

Without doubt the most valuable instruction of all was that offered to each child individually. As in all cases of practical agricultural teaching, the school garden instructor, when dealing with a class, must treat his subject for the most part in general terms. It is difficult for anyone to put these generalities into practice under a variety of unexpected conditions. For the child it is next to impossible. Consequently, a question answered at school or on the street

was of particular value to the work, but most satisfactory were the instructions given in the individual gardens.

Vegetable gardening, on a larger scale than is usually possible in the back yard of a city lot, was taught by means of a demonstration garden. Since it served as an ideal for many people, and offered experience of a rather extensive sort to a considerable group of boys, it will be described somewhat fully.

The demonstration garden.—About an acre of ground located on one of the main streets, just opposite a school building, was used during the summer as a demonstration garden. This was planted with three varieties of sweet corn, three of tomatoes, two of egg plants, two of peppers, two of turnips, three of radishes, endive, and potatoes. It served as a working place for several boys who were chosen



MAKING A STRAIGHT SEED TRENCH WITH THE USE OF A GARDEN LINE AND THE HANDLE OF A RAKE.

on a competitive basis to do the work. The chief value of the garden came as an object lesson to the community.

The planting was done by the school janitor and the instructor, with the aid of several of the boys who were more than glad to lend a hand. At the time of planting, the ground was in rather poor condition, as the weeds which were previously growing on it were not entirely covered in plowing. Thus by the time the crops were large enough so that hoeing and weeding could be started, they were nearly hidden with weeds. Some of the daisies were actually in bloom. This made an excellent opportunity for trying out prospective workmen, although the conditions for a successful garden were far from perfect. The garden had to be gone over several times during the first cleaning, whereas once would have been sufficient if the land had been more carefully plowed and harrowed.

During most of the summer there were but two boys working on the garden at one time. These were selected from a large number who originally applied, by a competitive system based mainly on the amount and quality of work which they accomplished while not under supervision. At the time, they did not know that they were being watched, although they did realize that if their work was good enough they would be given permanent employment. In this way trustworthy boys were chosen, and as a result very little supervision was needed to carry on the work successfully. The part of the project which required the most time on the part of the instructor was the supervision of the marketing.

The size of the project made possible a great deal of instruction which would have been impracticable on a smaller plot of land.



SOWING THE SEED.

The boys were taught to operate wheel hoes, as well as to remove weeds, and to make a dust mulch with their hands and a garden hoe. They were taught to tie tomatoes in several ways and to compare the results with those which were not tied at all. A small sprayer gave them an opportunity to learn about spraying, the mixing of spray materials, and the function of each ingredient. When the crops were harvested they learned something about salesmanship. All work done during the day was recorded at night.

The boys who worked at the garden were paid 15 cents an hour, except for selling, for which they received a commission of 20 cents on each dollar's worth of vegetables they sold. In this way the boys, all of whom ranged in ages from 10 to 15 years, were able to earn good wages. The plan was so satisfactory to the boys that 33 such gardens were started in the spring of 1917 as individual undertakings.

Assignment of plats.—With the exception of the children living in the congested part of the city, most of the garden club members had their plats in their back yards. The children who lived in the tenements and in other buildings of the same neighborhood were provided with plats of a reasonable size near their homes. These were located in two vacant lots. One was occupied by boys and the other by girls. The vacant lots were staked off into plats of different sizes to meet the needs of different children, and each plat was surrounded by a path $2\frac{1}{2}$ feet wide. Each child was assigned to a plat of his own in the spring, which he was required to spade, plant, and care for throughout the season. Any child neglecting to care for his garden and the surrounding paths in a satisfactory way was deprived of further use of it.



TRAINING TOMATOES.

PRELIMINARY WORK, SOIL PREPARATION, PLANTING.

Garden planning.—Actual operations went hand in hand with instruction, which was in most cases very minute. This was especially true while the children were drawing to scale preliminary working plans of their gardens. A great deal of individual instruction was necessary at this time for two reasons: First, because of the varying knowledge of the subject among the children; and, secondly, because of the completely different problem which each child had to solve. Many children had never had any garden experience at all; some had helped their parents who were experts, and were familiar with the growing habits of plants, garden equipment, and the use of fertilizers and sprays. These differences of gardening knowledge, combined with just as great differences in knowledge of arithmetic and drawing, shown by the children in putting on paper the plans for

the summer, made the preliminary planning especially difficult for each child. To add to the difficulty each child had an individual problem to solve. Every garden differed in topography, shape, size, soil, surroundings, and vegetables to be grown. As a result, every drawing was different, and the scales used in drawing were in many cases necessarily of a different degree to accommodate the differences in the sizes of the gardens. This makes plain the necessity of the careful individual instruction which was required while the children were doing this part of their work.

Preparation of soil.—The same minute care was necessary when the time came for preparing the garden. Each child, if large and strong enough, was required to do his own work. All were told at club meetings and shown in groups at demonstrations just how to clear off the land, fertilize, spade, and rake the soil. Their varying



SELLING THE PRODUCE.

knowledge in regard to these points also made individual instruction necessary. The combination of factors unknown to the children were not so numerous in this work as in garden planning, however, which made demonstrations especially helpful, and reduced the amount of individual instruction necessary.

Clearing off the land.—The two great obstacles in clearing off the land were the accumulations of rubbish and the dense growths of briars and small trees. Near the center of town, vacant lots and many back yards were covered with heaps of tin cans, old shoes, umbrellas, bottles, and all the other things that go to make up a real trash pile. More difficult to remove than these, however, was the vegetation which was most common in the outlying parts of town. Here each brier and sapling had to be removed root and all, a task which in many cases proved long and difficult. In all cases of clearing the soil,



TOOLS PRACTICAL IN LARGE GARDENS WERE USED.

however, the supervisor found that if he himself entered into the work, soon the boys of the whole neighborhood would be on the ground ready to lend a hand.

Spading.—After the soil was cleared, spading was the next operation. Here again individual instruction had to accompany the work of the children. Especially was this the case among the children of the tenement district. All steps—including the pushing of the spading fork deep into the ground; the easy way of lifting it when full of soil; the turning of the surface rubbish, manure, and sod down and the loose soil up; and the breaking of clods—were of necessity carefully explained.

Raking.—The knack of making a smooth seed bed with a rake, which comes only with much practice, was apparent in the final



IN THE CORNFIELD.

work of only a comparatively few children. All but a very few, however, did manage to get their gardens into fairly good shape for planting after much effort with both edges of the rake.

Planting.—In sowing seeds and moving plants, most of the children made their rows straight and parallel by means of a garden line and a rule. Some, however, used a board where the rows were short. They made their trenches with a rake handle, the back edge of a rake, a hoe, or the edge of a board. In some cases the seed was scattered by taking a handful and working it over the index finger with the thumb. In other cases the seed envelope was cut straight across one end and the seed distributed by shifting the envelope to right and left with the cut edge above and parallel

to the trench. When the time came for covering the seed and firming the soil, most of the children liked best to do the work with their hands. Others used the back edge of a rake, and some made a plow of their feet, taking short steps as they covered the seed and firmed the soil at the same time. While the latter method is amusing to the children, it is not very satisfactory. In moving plants the soil was carefully firmed about the roots. The most diligent of the children labeled each row in their garden with a stake. This bore the name and variety of the vegetable, the name of the seedsman, the dates of planting and transplanting.



THE WORK DONE DURING THE DAY WAS RECORDED AT NIGHT.

SEEDS.

The necessity of using good seed was impressed upon the children through bringing out the importance of labeling everything planted, so that a complete record could be kept of the seed used and its desirability. Seed-testing demonstrations during the late winter served the same purpose. At every opportunity the importance of dealing with reliable seed firms was impressed upon the children.

The seeds used by the children were purchased from well-established dealers. A few were donated. They were all procured in wholesale lots and then put up in small packets by some of the children under the direction of the instructor. Each packet was labeled by means of a rubber stamp as to the kind of seed it contained, the variety, the seedsman from whom it came, and the approximate date for planting.

The instructor's corrected copy of the rough working plans of each child's garden was used in place of an order sheet for each child. This was done by estimating from it the number of packets of each kind of seed which the child would need. This copy of the garden working plan and the packets of seeds necessary for each child were put into a large envelope which bore the name of the child to whom it was to be delivered.

The value of each child's seeds was also put upon the envelope. The total cost of the seeds was divided among the children as accurately as estimates of possible sales allowed. Each child was charged proportionately as the amount of seed he purchased bore a relation to the total amount of seed purchased in bulk for all. This method of handling the seed proved very satisfactory, but unless a great deal of seed is to be distributed it would be more convenient to purchase



DUCKS, TURKEYS, SPARROWS, GOATS, DONKEYS, COWS, AND OCCASIONAL UNSYMPATHETIC CHILDREN ARE PESTS TO BE GUARDED AGAINST.

the seed from some commercial house which is equipped to make up small orders such as children are likely to need.

OTHER SUPPLIES AND EQUIPMENT.

Early plants.—Most of the plants used by the children were purchased by them directly from the local dealers. Some were given to the children by neighbors. A few were donated to the organization, which in turn distributed them among the children. There was no set method used by the clubs for furnishing plants to the children. During the coming season provision will be made for this branch of the work. Some members have built hotbeds, in which they will grow their own plants.

Fertilizers and spray materials.—Children were instructed in regard to the application of fertilizers and spray materials, and were encouraged to use both freely. In so far as fertilizers and spray materials were used, they were procured by the children independently of the clubs. Stable manure was probably the most common fertilizer. The children were also told to save any wood ashes, leaves, or other litter which they might have, for composting.

Tools.—With the exception of the tools furnished to the children from the crowded section of town, the tools employed belonged to the garden owners or their parents. The children who had plats furnished them generally needed the tools provided also. There should be a well-equipped garden house at every group of gardens operated by children who do not have their gardens in their back



A NOT UNCOMMON PEST, BUT EASILY CONTROLLED:

yards. The children should be free to go for their tools at stated times when there is some one present to distribute them.

CARE OF THE PLATS.

The plats were in most cases cared for by the children alone. Some children received no instruction except from the supervisor; others were taught also by able parents and friends. This is the ideal way if the parents do not do too much.

Most of the children did their weeding and cultivating with hoes, rakes, and hand weeders, and by hand. A few had the use of a hand cultivator. More hand cultivators will be used in another year.

Every imaginable sort of trellis was used for beans, tomatoes, and peas. Trellises were made of poles, brush, and wire, and in an endless variety of ways. All were most interestingly constructed.

The control of insect pests and plant diseases was rather limited. Some spraying was practiced, however, and many of the larger insects, such as the Colorado potato beetle, were killed by hand. Dusting to repel insects was practiced perhaps more than any other form of pest control. These methods of pest control are not discussed in full, because of lack of space, and also because information on the subject can be procured from any of the State experiment stations, or the United States Department of Agriculture.

PETS AND PESTS.

Aside from the insects, plant diseases, and weeds, which make up the army of pests that infest the growing crops of the truck farmer, the city gardener has problems in regard to chickens, dogs, birds,



WELL PROTECTED—NOTE THE FENCE.

and other animals which at times become very trying. A child with very little capital, to take the proper precautions against the dangers involved by undertaking too many lines of agriculture on a city lot, finds this especially true. To some extent, the truck farmer is troubled by the same pests; but he usually owns the domestic animals within a dangerous distance, and has ample equipment for keeping them under control. If they are not his the neighbor to whom they do belong likely has a garden of his own, and so the trouble is averted.

In addition to the difficulties arising from these different interests, those arising from the number of animals in proportion to plants is very noticeable. In towns and cities, especially in some localities, the dogs, cats, chickens, sparrows, and other animals abound in great numbers. The difficulty is magnified when these animals are kept

in check by the inefficient methods of the child or the indifferent attempts of a neighbor who has no garden at all, or has it safely inclosed, and prefers to let his animals run at large. In such a place, the task of raising good vegetables becomes extremely difficult. Especially is this the case, no matter what the enthusiasm of the child, when the neighbor sees a small garden and has the unfortunate opinion that, because the attempts of the child are small and in proportion to his age or size, they are unimportant. As a matter of fact, this situation is not common, but it is regrettable to find it at all.



THE SAME GARDEN AS ON THE OPPOSITE PAGE, LATER IN THE SEASON.

Insects, plant diseases, and weeds are not discussed here because they are so commonly recognized, and because they are mentioned at different places throughout this report. Of the other pests that belong in the class to which the title of this discussion refers, chickens were likely the most numerous, although not always so totally destructive as some other animals. One boy attempting to establish a garden in a back yard alive with the dogs and chickens of the neighborhood decided that the safest way was to turn his chickens loose and use their inclosure for the garden.

Next to chickens, dogs and birds probably did the greatest total damage. Here again, however, their destruction in any one garden was not complete, and so the results to any one owner were not so disastrous. Their damage was largely done in the early part of the

season when the plants were small or even before they appeared above the ground. The dogs accomplished their destruction by running through the garden and in many cases were held in check very well by a low fence which diverted their path. The birds, especially the starlings and English sparrows, did their greatest damage by eating the tender leaves of young vegetables. They seemed to be especially fond of lettuce and peas. A string ornamented with strips of white cloth when stretched along the rows of vegetables served to keep them away to some extent as long as the wind was blowing so that the cloth fluttered about. This method, however, was not wholly effective. I have known some adults to go so far as to cover their lettuce with wire netting in order to protect it. The owners of one garden, recog-



· A LOW GARDEN, SUBJECT TO OVERFLOW, RAISED INTO BEDS TO AVOID DAMAGE FROM WATER.

nizing the danger from birds, dogs, and small brothers and sisters, without any suggestion from the instructor built a fence of store boxes to guard against dogs and children. Their precautions against the inroads of birds were most elaborate, consisting of a scare crow and several strings of cloths.

In at least two cases near the outskirts of town, cattle totally destroyed the gardens of members. Other animals which did considerable damage were ducks, rabbits, donkeys, and goats. A colored girl who owned a garden of merit, besides having about 15 ducks and an ever-increasing number of rabbits on a lot 50 by 100 feet to contend with, was blessed with dogs, cats, chickens, and pigeons. They all had their own homes, however, and for the most part behaved very well.

Some difficulty was experienced with children bothering each other's garden. Fortunately this matter was easy to control. There

was, indeed, one garden which was completely destroyed in this way, and a few other cases where some injury was done. Most of the damage occurred in sections where gardens were in groups. The garden which was completely destroyed came to a sad end because it was constantly improved with plants taken from adjoining gardens. The boys who owned the surrounding gardens were unable to appreciate such a thrifty method, and expressed themselves definitely. On the whole, however, the boys and girls respected each other's work and treated it accordingly.

Trees were the cause of many partial failures. Their branches cut off the necessary sunlight, and the roots robbed the gardens of their moisture and plant food. When many trees were present the efforts of the children were poorly paid.



SAND-PIT SHOWING CAUSE OF EXTREME DRYNESS IN SOME PARTS OF TOWN.

EXCURSIONS.

The members of the gardening clubs were taken in club groups on automobile trips through the neighboring agricultural region. The citizens of Englewood were very accommodating with their cars, so that it was possible to take a different group on every day from July 5 to July 13, with the exception of Sunday, July 9.

Some of the points of interest visited were well-managed upland truck farms, muck-land vegetable farms, fruit farms, a duck farm, a chicken farm, a dairy farm, a stock farm, seed-testing grounds for a large New York concern, a nursery, and the school gardens of a neighboring town. The following essay will give some idea of the value of these trips. It was hurriedly written some time after the trip by a boy who was making his first trial at gardening. He and

his brother were the only ones asked to write reports. The instructor requested these only that he might have some idea of what value the trips were to the children. The writer whose essay is copied here did not mention several of the stops and has confused the order of others. Several doubtful statements are credited to the instructor, and many details are lacking. On the whole, however, it is very satisfactory.

[A boy's narrative of a trip to a farm.]

A GOOD TIME AT VISITING FARMS.

When we started Mr. Smith told us to watch all the farms and what they raised and how it was kept. We started out with four seated in the back;



A LOW GARDEN, SUBJECT TO OVERFLOW, RAISED INTO BEDS TO AVOID DAMAGE FROM WATER.

three on the floor and Mr. Smith and the chauffeur in front with a small boy on Mr. Smith's lap.

The first farm we saw was one on Teaneck Road. It had corn, spinach, and tomatoes. Farther on we saw a rhubarb farm. The plants were about 2 yards apart. You could see even paths through the plants. The rows were hoed and clean kept. Mr. Smith told us that only labor and patience could keep the garden so well.

We passed many cornfields. Our first stop was at an old school. When we went out of the auto we noticed an old bell in the tower. The first thing we did was to see who could hit the bell first. We threw for about five minutes and then the bell was hit. Afterwards Mr. Smith took out two bags of peanuts and told us to stay about 20 feet from him. He took one bag and threw the peanuts into the air. Then there was a mix-up, everybody went for the peanuts. The second bag was thrown by the chauffeur. While we were holding up our hands to catch the peanuts Mr. Smith took our picture.

A little further up the road Mr. Smith told us that we were coming to a place where celery, onions, and parsley could only be raised. This place was

once a large lake, but the trees and shrubs sucked the water out and it formed a swamp. The farmers came and girdled the trees and dug up the soil, which was very black. The soil, which is called muck, is so rich that only vegetables that need a good soil can be raised there. When we came to the place we saw long rows of celery in a rich, black soil. Some of the rows had boards along-side of them. These boards were to keep the sun from the plants and make the stems white. The rows were about a yard and a half apart. In the middle of each row was a row of smaller plants, so when the larger ones were gone these would take their places. We came to a place where corn was growing among peach trees. This is called intercropping. When the trees get larger the farmer will have to stop planting stuff there. We saw tomatoes and potatoes growing among apple trees.

We went up a tall hill and saw for miles around farms and farms.

Our next stop was at a chicken farm. We did not see many chickens because they were in the fields. The farm had an incubator that contained more



A GOOD GARDEN RAISED ABOVE THE LOW GROUND TO THE LEFT, TO AVOID FLOODING. NINE YEARS OLD.

than a hundred cells and 48 eggs in each cell. The incubator contains 7,800 eggs. When the young chickens are old enough they are put in small coops. In the center of every coop is a round cover with small pieces of cloth hanging down. This is used as a mother.

We left this farm and rode around. Then we went to a duck farm. We went into the house where they make the food for the ducks. This is done by machinery. The farm held 18,000 ducks. The coops held ducks of different sizes. All you could hear was "Quack." The incubator room was so hot that we had to run out. Mr. Smith took our picture watching the ducks.

From here we went home. On our way we passed the Tenafly School gardens and the Cleveland School gardens. At the end of the trip we found that we had gone 30 miles in three and one-half hours.

I forgot to tell you about the pole-bean farm we saw by the schoolhouse. In whatever direction you looked was a straight line of poles.

It can plainly be seen that the essay is not a lesson in composition, although it might well be made so. Some confusion is evident. For

instance, the boy received a hazy idea of the formation of muck land, probably because of the necessarily hurried way in which it was explained. He did, however, learn that there is such a soil form and that in it grows most of the onions and celery which he eats. Many first-hand impressions of his surroundings which are of value and could not otherwise be adequately taught are evident from the report.

INFORMING THE COMMUNITY.

The publicity work connected with the project was of the utmost importance. This was carried on in a variety of ways. Newspaper



VISITING A SEED TESTING GROUND.

articles were used extensively. Gardens were labeled, and the one used for demonstration purposes was marked with a large sign. The produce sold was advertised as being grown by the garden clubs. That from the demonstration garden was sold from house to house with the idea of bringing the work to the notice of as many persons as possible.

On the Fourth of July the local board of trade conducted a parade in which the garden clubs participated. A small float decorated with vegetables from club gardens was drawn by two boys dressed as farmers. This was followed by a procession of other boys wearing overalls and straw hats and girls decked in sunbonnets and aprons.

They all carried hoes, rakes, or banners. For their showing in this event the clubs received a special prize of \$25.

Another form of publicity was the distribution of three preliminary reports. These were in typewritten form and were profusely illustrated with photographs. They were distributed in such a way that a great many persons were able to see them. Whenever one group of persons had finished with them, they were returned and sent to another group.

FOLLOW-UP PLANS.

The plans for the season of 1917 were based on the experience gained through the work done during 1916. An extension of the work with home gardens, group gardens, demonstration gardens,



NURSERIES ARE INTERESTING PLACES FOR EXCURSIONS.

and vacant-lot gardens, with slight modifications in systems of management, was provided. Plans for club organizations and competitions were based more definitely on existing school rivalry. New elements of organization and competition were introduced to meet the needs arising with a large number of vacant-lot gardens. Provision was made for some children who do not care for the clubs, but who wish to have supervised gardens. The method of registration included a personal visit to each home. Seed was sold to the pupils of all grades. Pupils below the fifth grade were not included in any of the clubs, but their gardens were visited and small premiums were awarded to the best of them. The record forms to be used by the children and the instructor were revised. Besides continuing on a

larger scale the methods of instruction used in 1916, lantern slides for explaining different operations were employed. Additional help for the supervisor was provided for in the new plan.

BLANKS AND CIRCULARS.

The following pages illustrate the blanks and circulars used. The record book used by the child and the teacher's record sheet were slightly revised for use during the season of 1917. The main features are the same, but some changes have been made to meet a few new conditions which have arisen. For instance, the old record provides for no place in which the child could keep a record of money loaned to it for seed and plowing. With large gardens coming into favor, a need for such a form has arisen. Most of the printing was done by the school vocational class.



A SMALL FLOCK OF HENS ON A LARGE POULTRY FARM.

A student's record.—The following completed record is not the best from the standpoint of neatness and literary execution. It was selected because the boys (two brothers) who operated the garden probably learned more about intensive garden practice than any of the other members of the clubs. They also kept their financial record in a creditable manner. How new they were to this work is evidenced by the fact that these two boys spaded under an unused back yard last season to make their first trial at garden work. In some instances the certificates of only one of the boys are shown.

REGISTRATION BLANK OF THE ENGLEWOOD GARDENING CLUB.

Name_____ School_____

Home_____

Age_____ Grade_____

Have you a back-yard garden spot?_____

If so, give its dimensions._____

What garden tools have you?_____

Have you money for seeds?_____

Have you ever worked in a garden?_____

Do you expect to be in Englewood all summer?_____

If not, how long will you be away?_____

I hereby approve of my_____becoming a member of the Englewood Gardening Club during the summer of 1916.

Parent.

A TYPICAL GARDEN EXCURSION.

Teacher's record sheet.—The form of record sheet used by the instructor follows:

School_____ Grade_____ Name_____

Age_____ Address_____

Seed finances.

	Date.	Terms.	Amount.
Location of garden_____	_____	_____	_____
Size of garden_____	_____	_____	_____
Experience_____	_____	_____	_____

RECORD OF VISITS.

Date,_____ Recommendations,_____ Grade,_____

One sheet was kept for each child. References were made to this sheet by means of an alphabetical list and a list arranged according to the location of the child's home.

Printed circulars.—The following are circulars which were written by the supervisor and distributed among the children. Aside from these, circulars from commercial houses and experiment stations were used.

THE WEED BATTLE.

Now, that your crops are planted and have started to grow, or will start to do so in a short time, you ought to turn your thoughts to the care of the small plants. There are at least four enemies of these little, tender baby plants which you will have to fight if your garden is to be successful. The first of



AN OBJECT LESSON IN BACK-YARD CLEANLINESS.

these is the other crop of baby plants in your garden which are known as weeds. There is always a disorderly mob of these savage invaders and unless you meet them with your hands and a good sharp hoe they will overrun your smaller army of well-drilled soldier plants. Yes, the hoe must be sharp, so that your task will be made as easy as possible. With a sharp hoe the weeds can easily be made to tumble in all directions, and the straight ranks of your army will remain as you want them. [To sharpen your hoe use a file and make the edge as much like that of a knife as possible.]

But a hoe can not do the whole trick. After the main army is killed many spies will try to hide in among your plants, dressing themselves in clothes similar to those worn by your men. But you must become well acquainted with your men and not allow the little red weeds to persuade you into thinking that they are beets. These and all the other weeds that lurk as spies in among the rows of vegetables must be met in a hand to hand battle. They must all be done away with.

The sooner you do this after your plants have pushed their heads above the ground, the easier will be your task. Small weeds are usually weak and very easily killed, but large ones are very strong. If you keep the soil between the

rows of your garden well hoed and loose, many of the weeds will be killed even before they appear above the surface of the ground.

In fighting this battle, however, you must be careful not to step on your vegetables or allow them to be disturbed in any way. If the hoe should cover them with earth, as it is bound to do unless you hold it firmly and guide it carefully, remove it with your hands, disturbing the plants as little as possible; give them all the chance you can, because civilized babies can not grow well with dirty faces. Continue this battle from time to time, especially after rains, when the soil is nearly dry, and you will be a victorious general.

LOOKING AHEAD.

In doing our gardening work we must constantly be looking into the future so that we can be preparing for what is to come by what we are doing at present. Now is the time to think of what is to be done several weeks or even



A STOCK FARM WHERE HORSES, SHEEP, HOGS, CATTLE, AND ALL SORTS OF POULTRY ARE KEPT.

several months hence and to act in preparation for what is to be done then. One particular thing which must be kept constantly in mind is the public exhibit at which the things we have grown in our gardens will be shown. This exhibit will be held near the middle of September; and unless we keep it in mind from now until that time we will not make the showing which is expected of us. This will be our second public appearance; our first, in the Fourth of July parade, made a big hit, and we have to do even better in our next. But in order to do ourselves justice every one of us must play the game as if we meant it from now until the exhibit is over.

In doing our share there are two things at which each of us must work just by way of preparation: First, we must take care of our gardens in the best way we know of, so that our things will grow large and good to look at. We all know what this means—the weeds must be done away with, the injurious insects must be killed, the ground must be kept loose, and the plants must be thinned so that they have plenty of room in which to grow. If there is any-

thing that we do not understand, we can ask Mr. Smith when he calls to see our gardens, or write him a post card addressed to Liberty School.

Second, we must plant vegetables in the spaces left by the removal of the early crops. Already some of the boys and girls have planted late beets, radishes, turnips, beans, and many other vegetables which they will show at the fair. Mr. Smith can also help in choosing late crops for this purpose.

If we are not careful, some of our fellow club members who are already preparing for their part of the exhibit will get ahead of us. None of us dare allow this, because our exhibit at the fair counts one-third toward the final mark for the season upon the basis of which prizes are awarded. Aside from these prizes for the work of the season, there will be premiums offered at the fair for the best exhibits. Now let us all get to work and show the other members of the club as well as the public that we know what we are doing and that our part of the Fourth of July parade was merely a sample of what we stand for.

GARDEN CLUBS OF THE ENGLEWOOD SCHOOLS—CIRCULAR OF INFORMATION.

A START FOR NEXT YEAR.

Another thing in regard to which we should look ahead is our gardening activities for next year. Now is the time to decide on what we expect to do then. Our plans do not need to be completely made out at this time, but if the best results are to be obtained there are some things which should be done.

First of all we should decide on the size of garden which we expect to cultivate. We have all learned by a year of experience that we can make vegetables grow and have gained some idea of the size of garden that we can successfully operate. That is, we know just about how much land we can prepare for planting, plant, and care for throughout the summer. Most of us can proudly say that we feel that next year we can care for a larger plat of ground than we have now and do it in a better way than we have cared for our gardens this year. Some of us have even gotten into our heads the idea that we can use one of the vacant lots in our neighborhood for a garden similar to the one across from Cleveland School, which is owned by the garden clubs. (If you have not seen this garden, be sure to visit and ask questions of the boys who take care of it.) This is all fine, but whatever we undertake to do next year should be thought of now. The thing to do first is to decide on how large a garden we wish to care for next year.

When this is determined, the next step is to decide where the garden is to be situated, if we have not already its location in mind. The question for each of us is whether it will be in my back yard or whether it will be in a vacant lot near home. Unless our back yards do not afford a place for a garden, or unless that place is not large enough for what we wish to undertake, we should use it in preference to a vacant lot. But if we can not do as we please in our back yards, we should go to the nearest vacant lot which we think would answer our purpose and secure the use of it for next year. Mr. Smith can help you do this.

Now that the size of the garden and its location is decided upon, work should be started at once in getting the ground into shape for next year. This is very important, although it seems like a long time before the land is to be used. The good farmers that we visited on our automobile trips plan on the use of

their lands for five or six years in advance, and so, surely, we should think at least a year ahead and prepare for what is to come then.

If the garden is to be located in the back yard where a garden has been growing this year, work should be started in cleaning away all rubbish just as soon as the different crops are removed. If the season is too far advanced to plant other vegetables in the place of those that are removed, as it will likely be, the ground should be spaded and as much manure as can be procured turned under. When this is accomplished a cover crop (by this is meant a crop of some sort which will keep the rain from washing the garden during the winter) should be planted. For this purpose several things can be used. Rye mixed with winter vetch will likely be the best, although other crops may be used. If we do not know what these things are or where to procure the seed, Mr. Smith can help us.

Those of us who decide to have a garden where there is no garden now should start even earlier to prepare for next year. If our ground is covered with rubbish of any kind, this should be removed at once. Some of us will have but little rubbish, but will find our ground grown over with a heavy crop of grass and weeds. These should not be removed, but should be turned under and used as a green-manure crop, which will make our vegetables grow all the better next year. Along with these all the manure that can be had should be covered over. When this is done a cover crop like the one mentioned above should be planted. In the spring these cover crops can be turned under to act as green-manure crops, which will make a still better garden.

No, it isn't too soon to think it over, after all. When we stop to think, there are lots of things we ought to do if we are going to make the most of our garden next year. What we have discussed here is of the very most importance and applies to every one of us. There are many other things which should be thought of before next spring, and these will be taken up from time to time.

Post-card announcements.—At two different times during the season announcements were made by means of postal cards, which are copied below:

FOURTH OF JULY PARADE.

Meet on Cottage Place at 2 p. m.

BOYS carry rakes and, if possible, wear farmer hats and overalls.

GIRLS carry hoes and, if possible, wear sunbonnets and aprons.

NOTE.—If you have any vegetables that can be used in decorating a float, bring them to Liberty School about 5 p. m. Monday, July 3.

AUTO TRIP.

Meet at the school you attended last year at 1 p. m. on Thursday, July 13.

C. O. SMITH.

IMPORTANT NOTICE.

On Thursday, Friday, and Saturday, September 14, 15, and 16, the Garden Clubs of the Englewood Schools will hold an exhibit in the windows of Capestro & Co., 42 East Palisade Avenue, and J. D. Chiesa Sons, 10 Dean Street. The products to be exhibited will be collected by means of a wagon early in the morning. If you attended Lincoln School last winter, have your products ready



Preparation.



Success.

A PARADE.

on Thursday morning. If you attended Liberty School, have them ready Friday morning. If you attended Cleveland School, have them ready Saturday morning. Help to make the exhibit a success by having your vegetables clean and attractive in every way.

CHARLES ORCHARD SMITH.

Both of the times this method was used it proved to be very efficient, because all the children received notice of what was to occur at the same time and at a time when they could not well "forget" the occasion to which they referred.

Name Jordan Katz No. _____
 Address Elmwood Ave
 Age 14 Year 1916
 School Liberty School
 Size of garden 296 Square feet
 Photograph of garden and owner



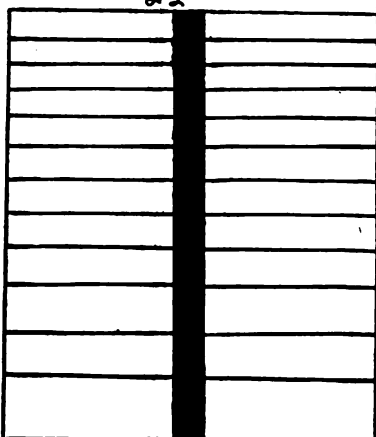
CERTIFICATE

I hereby certify that, as far as I know,
 this record is correct.

Joseph Katz
 Parent or Guardian
P. J. Horvath
 Principal of School

Diagram of garden

22



FINANCIAL RECORD

Month	Charges		Credits	
April		65		
May		50		20
June		75	1	10
July			3	68
Aug.			1	54
Sept.			2	65
Oct.			1	67
Total	1	90	10	94
Profits			8	94

Visits				Fair		
Date		Date		1st.	2nd.	3rd.
4-28-16	95	8-31	95			
5-17	95	9-7	95			
5-30	85	9-28	95			
6-15	95	9-31	-			
7-1	100	10-7	95			
7-19	95	11-7	95			
8-3	95					

FINAL

Garden 95 per cent.

Record 98 per cent.

Fair _____ per cent.

The final average of points scored by the member is 97

Charles Orchard Smith
 Supervisor of gardens

APPENDIX.

A GARDEN NOTE BOOK.

This is to certify that

Isidore Katz

is a member of the

Senior Gardening Club

branch of the

ENGLEWOOD

Gardening Clubs

having been recommended by

Joseph Katz

Parent or guardian

W. W. Staver

Principal of school

and approved by

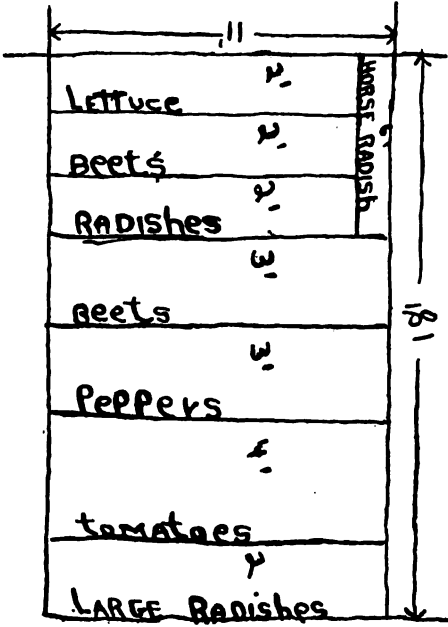
Edgar Bloxson

President of branch

Charles Orchard Smith

Supervisor of gardens

THE WORKING PLAN OF MY GARDEN



1/2 of GARDEN

Size 18x22

Scale 1/4" = 1'

ISIDORE KATZ

ITEMIZED ACCOUNT

[illegible]

ITEMIZED ACCOUNT

Charges					Credits				
Date	Item	Time Hrs. Min	Am't	Totals	Date	Item	Am't	Totals	
					Sept 15	tomatoes	10		
					" 16	"	05		
					" 17	"	05		
					" 18	"	05		
					" 20	"	15		
					" 25	"	05		
					" 26	"	05		
					" 27	"	05		
					" 27	cabbage	05		
					" 28	tomatoes	15		
					" 29	"	25		
					" 30	"	15		
					Oct 1	"	05		
					" 1	beets	05		
					" 5	cabbage	05		
					" 3	tomatoes	05		
					" 4	"	10		
					" 7	"	10		
					" 8	"	05		
					" 8	cornmeal	05		
					" 9	tomatoes	15		
					" 10	"	05		
					" 11	"	05		
					" 13	"	10		
					" 13	beets	05		
					" 14	tomatoes	15		
					" 19	"	50		
					" 23	beets	10		
								10 54	

THE STORY OF MY GARDEN

We started digging our garden about April 20, 1916. The digging took till May 1, 1916. When it was over we divided it into two parts by putting a path in the middle.

On May 1, we started planting our seeds. The first thing we planted was radishes. We planted four rows of red globe, two rows of long and one of lady finger radishes.

The next three rows were carrots. They came up in a week. At first they looked like blades of grass but later they got their second leaves and looked like something.

After the carrots we left a space for the coming lettuce. When the latter was large enough to transplant we made holes about a foot apart and there put the plants in. The lettuce was very good and we made a good profit on them.

Below the lettuce we planted cabbage. After the cabbage was in. We planted Golden Bantam but being so near to the fence we had to use Golden Bantam because the hedge took all the food that was supposed to be for the corn. This is only one half of the garden now until till you about the other half.

At the top we planted five rows of beets which came up very well. Below we planted lima beans. Below these we had eighteen tomato plants which have a crop of two bushels of tomatoes.

2

THE STORY OF MY GARDEN

Alongside the fence we planted more corn. Between the corn and beets were cucumbers which died when the first frost came. Below these we planted string beans.

We tried another rowing. We planted lettuce between tomatoes, beets, radishes and carrots. We planted cabbage between the tomatoes. After the globe radishes were gone we planted black radishes. These did not come up very well so we took them out and planted spinach.

In place of the lady finger and French radishes we planted peas which came up very good but did not give a large crop. In place of the lettuce we planted radishes and beets. We had three rows of each.

The radishes were soon gone but the beets remained. After the beets we planted string beans which came up in three days. We had about 6 rows and got twelve qts of good sized beans.

Below the beans we planted one row of parsley. The parsley was good and grew fast but we could not sell it. After the parsley was planted the beets began to go.

When the frost came in October the stuff began to freeze and just the head of the thing remained. When we had the spinach we made a hot bed. We enjoyed gardening very much and we intend to have a large garden next year.

Doris E. 1937

DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1917, No. 16

STUDIES IN HIGHER EDUCATION IN
ENGLAND AND SCOTLAND

WITH SUGGESTIONS FOR UNIVERSITIES AND COLLEGES
IN THE UNITED STATES

By GEORGE EDWIN MACLEAN
FORMERLY PRESIDENT OF THE STATE UNIVERSITY OF IOWA



WASHINGTON
GOVERNMENT PRINTING OFFICE
1917

BULLETIN OF THE BUREAU OF EDUCATION.

NOTE.—With the exceptions indicated, the documents named below will be sent free of charge upon application to the Commissioner of Education, Washington, D. C. Those marked with an asterisk (*) are no longer available for free distribution, but may be had of the Superintendent of Documents, Government Printing Office, Washington, D. C., upon payment of the price stated. Remittances should be made in coin, drafts, or money order. Stamps are not accepted.

For numbers prior to 1916 see leaflet, "List of Available Publications, Bureau of Education," which may be had on application.

1916.

- *No. 1. Education exhibits at the Panama-Pacific International Exposition. W. Carson Ryan, Jr. 25 cts.
- No. 2. Agricultural and rural education at the Panama-Pacific International Exposition. H. W. Foght.
- *No. 3. Placement of children in the elementary grades. K. J. Hohe. 10 cts.
- *No. 4. Monthly record of current educational publications, January, 1916. 5 cts.
- No. 5. Kindergarten training schools.
- No. 6. Statistics of State universities and State colleges, 1915.
- *No. 7. Monthly record of current educational publications, February, 1916. 5 cts.
- *No. 8. Reorganization of the public-school system. F. F. Bunker. 20 cts.
- *No. 9. Monthly record of current educational publications, March, 1916. 5 cts.
- No. 10. Needed changes in secondary education. Charles W. Eliot and Ernesto Nelson.
- *No. 11. Monthly record of current educational publications, April, 1916. 5 cts.
- No. 12. Problems involved in standardizing State normal schools. C. H. Judt and S. C. Parker.
- *No. 13. Monthly record of current educational publications, May, 1916. 5 cts.
- *No. 14. State pension systems for public-school teachers. W. Carson Ryan, Jr., and Roberta King. 10 cts.
- *No. 15. Monthly record of current educational publications—Index, February, 1915-January, 1916. 5 cts.
- *No. 16. Reorganizing a county system of rural schools. J. Harold Williams. 10 cts.
- No. 17. The Wisconsin county training schools for teachers in rural schools. W. E. Larson.
- *No. 18. Public facilities for educating the alien. F. E. Farrington. 10 cts.
- No. 19. State higher educational institutions of Iowa.
- No. 20. Accredited secondary schools in the United States. Samuel P. Capen.
- No. 21. Vocational secondary education.
- *No. 22. Monthly record of current educational publications, September, 1916. 5 cts.
- No. 23. Open-air schools. S. P. Kingsley and F. B. Dressler.
- No. 24. Monthly record of current educational publications, October, 1916.
- No. 25. Commercial education. Glen Levin Swiggett.
- No. 26. A survey of the educational institutions of the State of Washington.
- No. 27. State higher educational institutions of North Dakota.
- *No. 28. The social studies in secondary education. Arthur W. Dunn. 10 cts.
- No. 29. Educational survey of Wyoming. A. C. Monahan and Katherine M. Cook.
- No. 30. University training for public service.

[Continued on p. 2 of cover.]

DEPARTMENT OF THE INTERIOR
BUREAU OF EDUCATION

BULLETIN, 1917, No. 26

GARDEN CLUBS IN THE SCHOOLS OF
ENGLEWOOD, NEW JERSEY

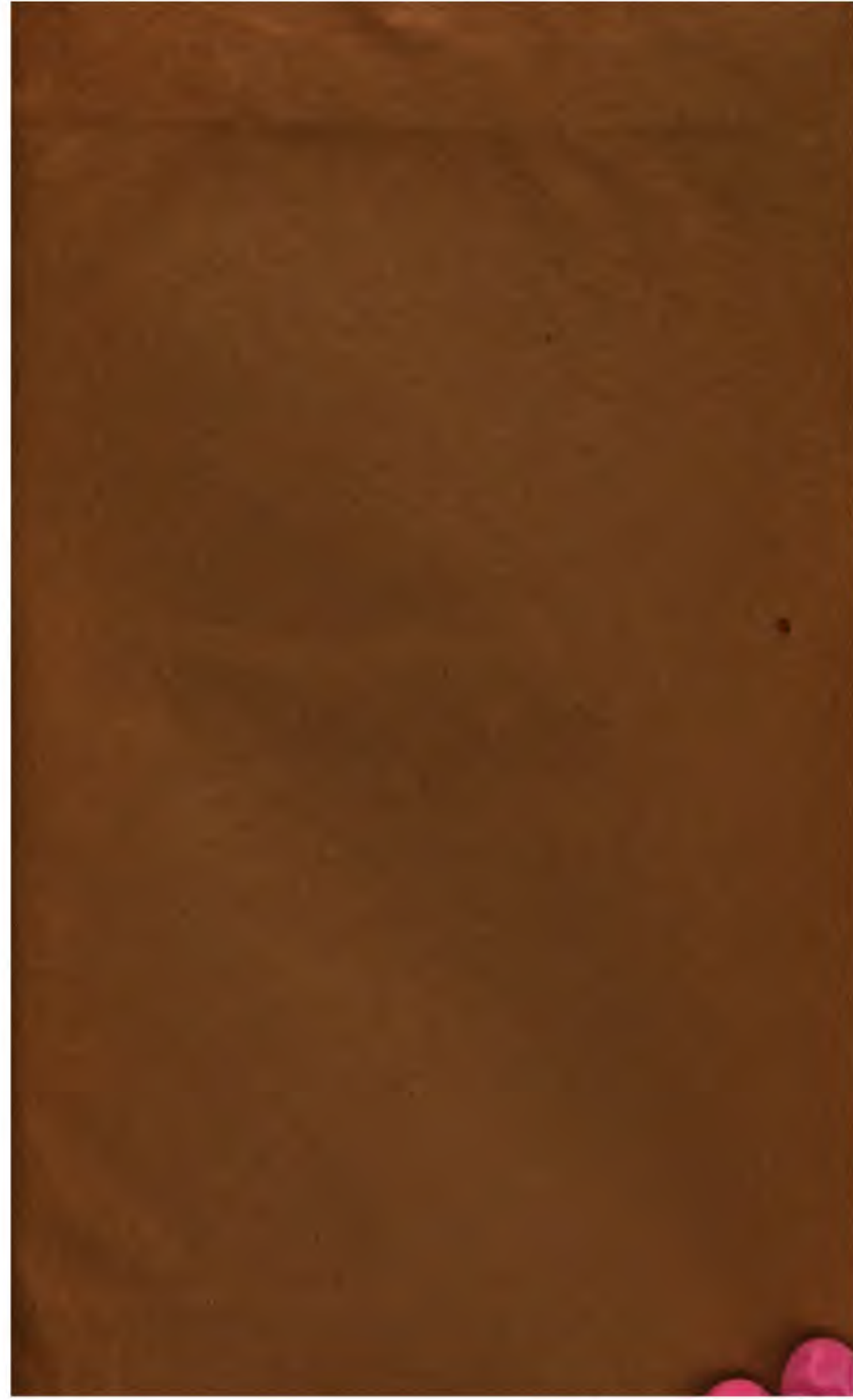
BY

CHARLES ORCHARD SMITH



WASHINGTON
GOVERNMENT PRINTING OFFICE
1917

BULLETIN OF THE BUREAU OF EDUCATION FOR 1917.



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